

User Manual Guide

AT870

Windows CE® .NET Ruggedized PDA



SmarTerminal™

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Before You Begin

This section provides you with safety information, technical support information, and sources for additional product information

Who should read this manual?

This manual is written for the person who is responsible for installing, configuring, and maintaining the AT870.

This manual provides you with information about the features of the AT870, and how to install, configure, operate, and maintain it.

Before you work with the AT870, you should be familiar with your network and general networking terms, such as IP address.

Safety information

Your safety is extremely important. Read and follow all warnings and cautions in this document before you handle and operate SmarTerminal equipment. You can be seriously injured, and equipment and data can be damaged if you do not follow the safety warnings and cautions.

WARNING

A warning alerts you to an operating procedure, practice, condition, or statement that must be strictly observed to avoid serious injury to the person who working on the equipment

CAUTION

A caution alerts you to an operating procedure, practice, condition, or statement that must be strictly observed to prevent equipment damage or destruction, or corruption or loss of data.

NOTICE

A notice makes you have more information while you use AT870

Chap1. Using The AT870

This chapter introduces the AT870 Mobile Computer to enhance wireless connectivity needs and contains hardware and software configuration to assist you in making the most out of your AT870.

1. Introducing

The SMARTERMINAL AT870 mobile computer is a small, ergonomically designed mobile computer built on the Microsoft window CE NET 5.0 operating system. The PDA uses an Intel® Bulverde CPU and a 3.5" VGA, color Touch screen display. The PDA supports wireless LAN 802.11b/g (embedded module) for communication.

1.1 Features

Remove all the items from the packing box, and check to make sure all the parts are present:

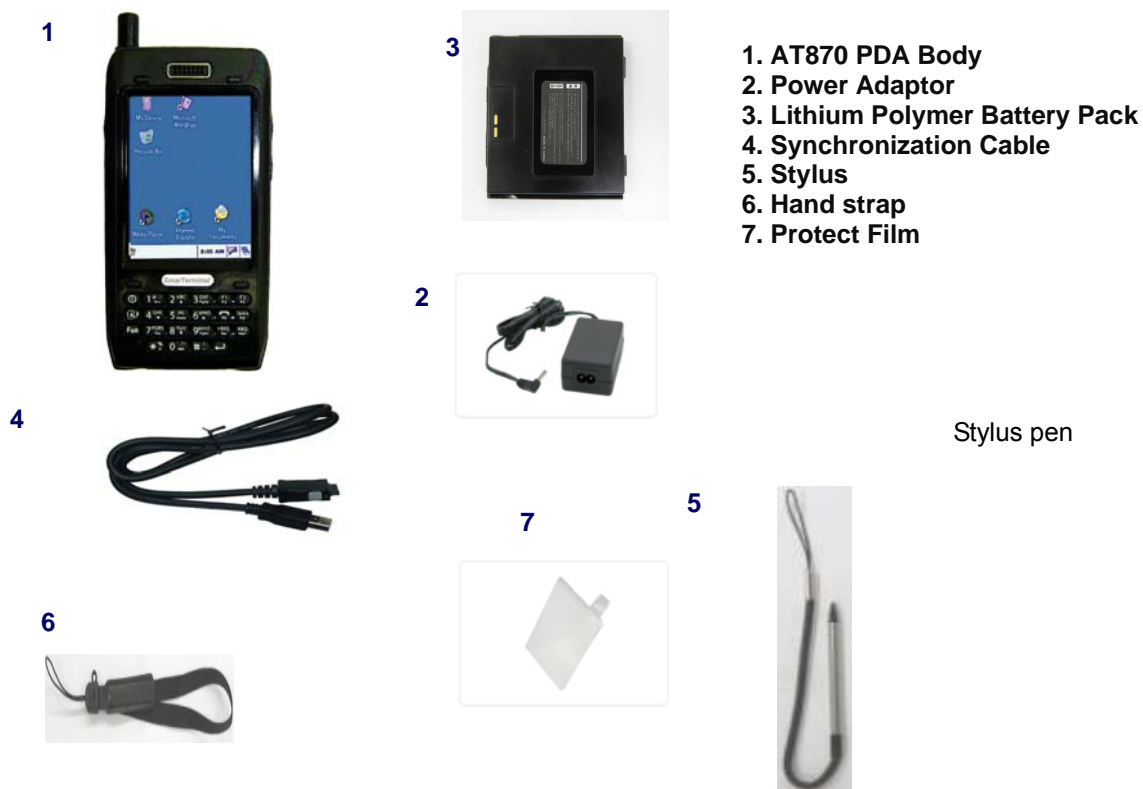


Figure1. In the Packing box

1.2 View of the PDA #1

Refer to Table 1 for a list and description of the illustrated features.



Figure2. Front View

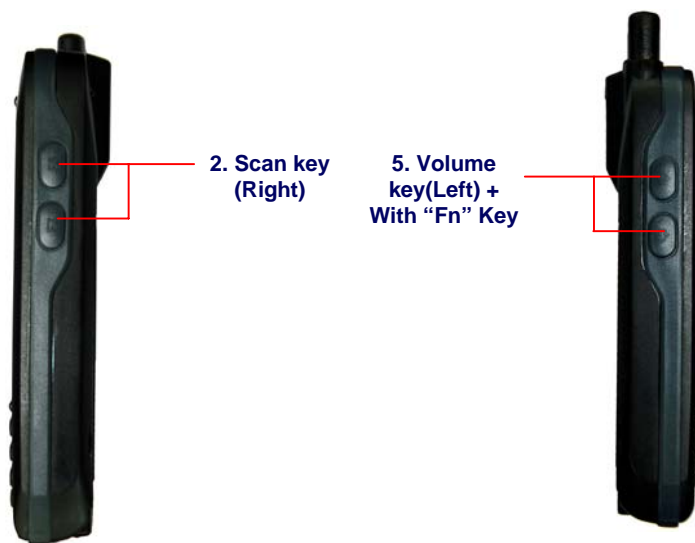


Figure 3. Side view

1.3 View of the PDA #2



Figure 4. Top view



Figure 5. Bottom view



Figure6. Rear view

1.4 Table 1 Features Function/Description

Features	Function/Description
1.LCD/Touchscreen	LCD touch screen displays information and data. You can see the results of your work through the LCD touch screen. The AT870 has a stylus you can use to select items and enter information. Caution: Do not use a pen, pencil, or other sharp object on the AT870's touch screen. Use only the supplied stylus or plastic-tipped pens intended for use with a touch-screen sensitive display.
2.Scan key (Left and Right)	Use either the right or left <Scan> button to activate the scanner and read a bar code. The scanner starts to read the bar code. The scanner automatically turns off either when the barcode is read, when you release the scan button, or after 10 seconds, whichever comes first.
3.Scan Window	The scanning beam is emitted from this aperture. Aim the scanning beam at the bar code you wish to scan. Refer to "Scanning Bar Codes" on page 23 for more information.
4. 19.WLAN ON/OFF display light	It makes you know that the WLAN is on or off.
5.Volume Key	Volume up / down with FN key
6.Power LED / Alarm Indicator	When the battery pack is installed in the PDA and charging in the Dock, this LED is Red. When the battery is completely charged, the LED changes to Green. When the LED flashes blue, it indicates a low battery. Some applications use a blue LED to indicate an Alarm or Error.
7.DC Power jack Port	Connect the external power adaptor to this port to charge the battery. You must charge the batteries for thirteen (13) hours prior to first use. Charge the battery completely. Subsequent charge cycles require four (4) hours.

Features	Function/Description
8.USB/Serial Synchronization Port	To synchronize data between a PC and the PDA, connect the USB or Serial cable with Desktop and the PDA. You must download and install Microsoft ActiveSync 3.7 or higher in the PC. Download ActiveSync from the Microsoft Web site at www.microsoft.com .
9.Reset Key	Use (R/S) button located on the Keypad of PDA to perform a soft and hard reset. Please refer to the section 4 –Resetting the PDA.
10.Speaker	The speaker emits the sounds from *.WAV and other media files. It can also be set to emit beeps or tones to indicate errors or good reads when bar code scanning and inputting data using the keypad or stylus.
11.Power/ Key	Press the Power/Backlight key briefly to turn the unit on. The Backlight comes on automatically. Press this key again briefly to turn the unit off.
12.KBD key	KBD key executes input panel (SIP) Press again, input panel (SIP) disappears
13.Keypad	Use the alpha-numeric, function, and navigation keys on the keypad to enter numbers, letters, symbols and navigate. For details on each key in the keypad, please refer to the section 7 - Using the Keypad.
14.Ear Port	Connect the Ear/Microphone to listen to audio files using the media player, or communicate with others using an application such as GSM.
15.Battery Compartment.	Insert battery charged fully in this compartment.
16.Handstrap	The PDA comes with the hand strap, which is easily removable to access features and can be replaced by an ergonomically designed handle.
17.Stylus	Use the stylus for navigation, on the soft input panel (SIP), and to select items on the touch screen. It is a good idea to replace the stylus in the holder after each use so you don't lose or misplace it.
18.MIC	Use it, when you are calling through GSM
19. Low Battery LED	The battery becomes red and blinks automatically, when it is in the "low Battery Status"
20. Antenna	GSM/GPRS, HSDPA.
21. Camera	1.3Mega,
22. Flash	Pictures in dark areas is used to things.

2. Power

This section introduces the power system of AT870 such as power switch and battery.

2.1 Power ON/OFF

2.1.1 Power ON

1. Press power key, the AT870 and the backlight will be on.
2. To save power and prolong the battery, the screen gets to be off, when the AT870 goes into idle mode. And it is easy to resume activity. Just tap the screen or press any key on the keypad.

2.1.2 Power OFF

1. Press power key, you actually suspend the AT870 and turn off the display and backlight.
2. The other method: **Tap start > Suspend**

2.1.3 What is idle mode?

It is the period that computer goes on without any activity for a long time, but it doesn't have influence on data

You can set up the idle mode and the PDA will go into the idle mode automatically after the interval that you set goes to the end. It helps you prolong your battery life. If you want to restart your AT870 while the PDA goes into idle time, tap anywhere on the screen.

To change the time into idle mode

Tap Start > Setting > Control Panel > Power

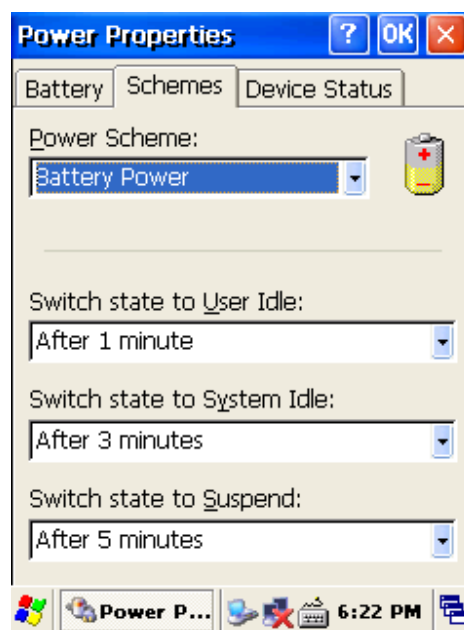


Figure 1. Setting Idle time

2.1.4 Suspend mode

1. When you do not use AT870 for a long time, make your AT870 go into the suspend mode for saving power.
2. If you want to restart your AT870, press power key.

2.2 Battery

AT870 uses replaceable 4400 mAh, Li-ion batteries.

If the battery continues to drop to the “Low Battery Status”, the battery status LED becomes red and blinks. You need to recharge the battery.

2.2.1 Checking Battery Power

You can check the battery status by using the power applet.

Tap Start > Settings] > Control panel > Power

The power control panel applet displays a battery power gauge.

2.2.2 Very Low Battery Status

To prevent the AT870 from being discharged completely, your AT870 will be suspended, when the battery continues to get low. You need to recharge your battery before the battery continues to drop.

2.3 Removing and installing the battery

2.3.1 Removing the battery

At first, pull out the hand scrap and then press the battery latch to the above until the battery is released from the AT870, then lift it out.

2.3.2 Installing the battery

Insert the bottom of battery into the sunken place located in battery compartment, and press the battery latch to the above until the battery is installed completely.

2.4 Battery discharging

Several factors determine the life of your battery such as extreme temperatures, input devices, and your usage, but generally you can use AT870 for 6~12hours.

If the AT870 is not on external power and battery pack is removed, it will enter suspend mode.

2.5 Recharging the battery

Use the adapter provided from SMARTERMINAL to recharge your battery.

Caution

Your AT870 can be damaged, in case of using the adapter that is not provided from SMARTERMINAL.

2.5.1 Using the adapter

The charge/operating power can be applied to AT870 by using DC adapter.

1. Connect the adapter to the power cord.
2. Connect the DC power jack to the AT870.
3. When the battery is charging, the LED becomes red.

2.5.2 Using the Dock

The Dock is for charging AT870, and the dock is one of which also can act as a communication port.

CAUTION

Make sure the AT870 is firmly seated in the dock, charger, or power adaptor.

If it is not firmly seated, battery charging and communication with the Host PC will NOT be initiated.

2.6 Backup Battery

The backup battery in the PDA is a 200mAh rechargeable battery that holds system data at least 2 hours without main battery.

CAUTION

If you remove the battery or the battery completely discharges, there is a two(2)hour window in which to insert a charged battery before the backup battery completely discharges and the contents of the RAM memory are lost. It is a good idea to keep your data and applications in Flash Disk for that reason. Refer to “Flash Disk” for more information.

If both the battery pack and the backup battery are allowed to discharge completely, you must recharge both batteries for thirteen (13) hours.

The backup battery is charged off the battery pack, so it is important to keep the battery pack with at least a minimal charge so the unit can maintain date, time, data, and other settings.

2.7 Disposal of the spent battery

When the battery reaches the end of its useful life, the spent battery must be disposed of by a qualified recycler or material handler

Warning

Do not mix the spent battery with the solid waste stream and keep away from children.

3. Setting up the AT870

This section describes the basic information for setting your AT870.

3.1 Power On

Press the **Power** key briefly to turn on the PDA. The **Backlight** comes on automatically. Press this key again briefly to turn off the PDA. To turn off the **Backlight** while the PDA goes on, press and hold the key for at least a second. This key acts to toggle the **Backlight** function off and on.

Desktop: The figure at the right shows the desktop display, or main screen.

3.2 Power Off

To turn the PDA off, press the **Power** key again. This action suspends the device, but does not actually turn it off. All running applications remain as you left them until you press the **Power** key again to resume operation of the device.

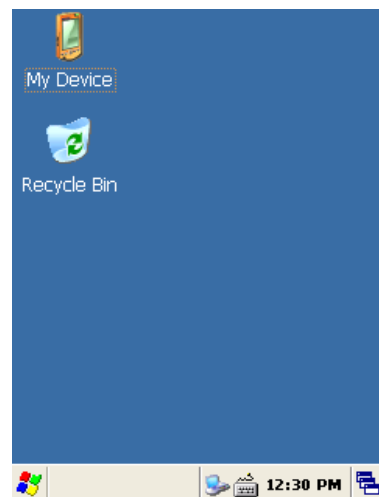


Figure 1. Background Screen

3.3 Adjusting the Brightness

The AT870 manufactured at the factory keeps 80% brightness, but because of several reasons such as dark environment or user's condition of eyesight, and above all, the illumination consumes much power, so that the users want to adjust the backlight.

To adjust backlight:

Tap Start > Settings > control panel > backlight

Level: you can adjust the brightness

Backlight: you can adjust the entry time into idle mode when use AT870 with battery power or external power.

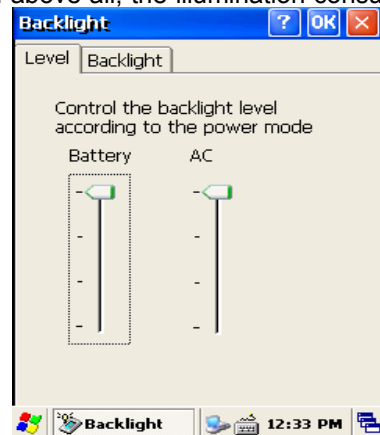


Figure 2. Adjusting Brightness

3.4 Calibrating the screen

According to user's personal treatment, and activity, applications installed in the AT870 need to be set up after purchasing it.

Calibrating the Touch Screen

Thought the screen is already calibrated, but if you have feeling that your screen isn't responding properly to your tap, you can recalibrate it again.

To recalibrate the screen

Tap start > Settings > Control panel > Stylus > Calibration > Recalibration

Press and briefly hold stylus on the center of target, and repeat 5 times as the target moves around the screen. The screen counts 30 seconds after calibrating, and you can finish the recalibration to touch screen wherever you want. If you did not have any action, the screen will automatically finish the recalibration of itself.

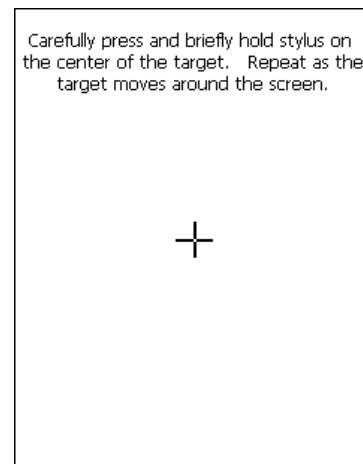


Figure 3. Recalibrating

3.5 Adjusting the Volume

Volume & Sounds

Your AT870 manufactured at factory is set at the maximum volume, so you can adjust the volume if you need suitable sound.

To adjust Volume & Sounds

Tap Start > Settings > Volume & Sounds

Volume tap: tap to adjust Volume

Sounds tab: tap to set the imitated sounds

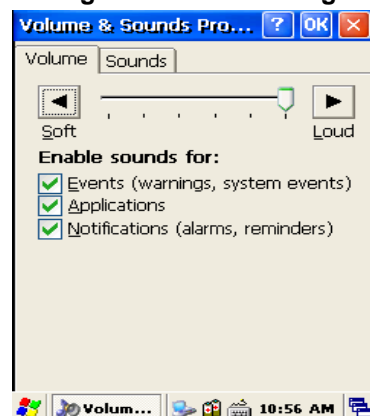


Figure 4. Adjusting volume

3.6 Setting up the Date and Time

Date & time

You can set the current time located at the bottom of screen.

Tap Start > Settings > Control Panel > Date & Time

Year: Select the year, then the spin control appears. Try to set the year though the navigation key or up/down button.

Month: Select the month directly, then the full months of one year appear. Try to select the correct month. You can also select the month though the left/right key.

Day: Just tap a day in the calendar.

Time: you can set the time though the up/down button.

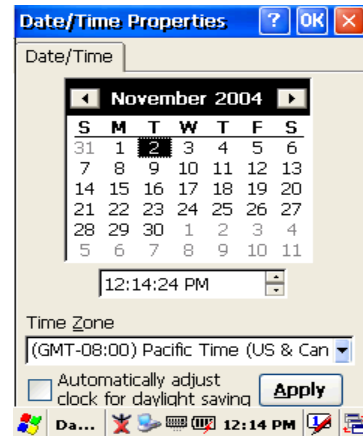


Figure 5. Date/Time

If you set the time zone one time, you can set the correct local time easily by changing the location into where you are.

3.7 Power Configuration

To adjust power management settings,

Tap Start > Settings > Control Panel > Power

Use this control panel to check the charge on the battery or to change the Power settings.

Battery Tab

Battery tap: It shows the power remained in the main battery and the backup battery.

To exit, press OK from the command bar, or press the <Enter> key on the keypad.

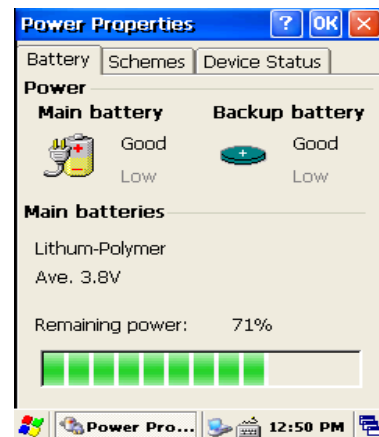


Figure 6. Battery status

3.8 Schemes Tab

It allows you to determine the entry time of user's idle mode, system idle mode, and suspend mode while you use either main battery or AC power. This will help you to save more power, if you have to move repeatedly on your work.

To exit, press OK from the command bar, or press the <Enter> key on the keypad.

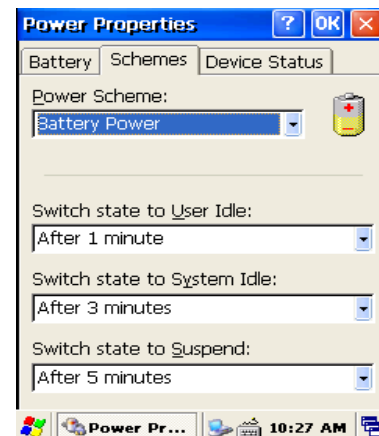
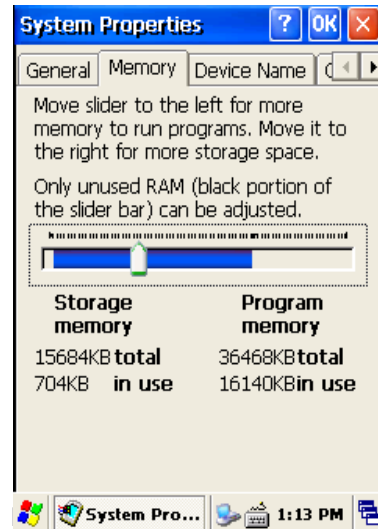


Figure 7 . Schemes Tap

3.9 Memory Allocation

Adjust the Memory Allocation with the following steps:

1. **Tab Start > Settings > Control Panel > System Properties**
2. Select the Memory tab.
3. Move the slider to adjust memory allocation. Default storage Memory is normally set to about 8 MB with the remainder.
4. Press the OK button, or the **<Enter>** key on the keypad.



4. Resetting the PDA

When the AT870 completely stops responding for your command, or an application is locked up and does not respond, and when you want to upgrade the firmware, it may be necessary to perform a reset.

Caution

Always attempt a Warm reset before initiating a Cold reset. Once you initiate a cold reset, all applications are forcibly closed and working RAM and files are cleared. It is a good idea to store important data in the resident (Flash Disk) for this reason.

Warning

Do not use force or a sharp object like paper clip to press the reset button. Use the stylus for that purpose. Sharp object like paper clip could puncture the seal of the reset key.

4.1 Warm Reset

When you should perform the warm reset?

When you cannot turn on or off a program, or execute other programs because of “hang”-the system error that stops responding. The “warm reset” for recovering the AT870 is to press R/S button on the front of AT870. This method not guarantee that cashed disk data will be saved, so transactional data maybe lost during the reset.

Procedure to Warm Reset. To initialize warm reset, press and hold the **<Reset>** key.

After Warm Reset

- The splash screen will appear shortly.
- The desktop appears with the application shortcuts on the screen.
- The custom settings in the registry are persistent.
- The RF Network PC Card if present, connects to the network system.

4.2 Hard Reset (cold reset)

When you should perform the cold reset?

If the performed reset method fails to restore system operation, it may be necessary to perform a hard reset. This is a boot method that formats the object store to clean data and registry information

from the AT870 system and restores them to their factory-default state.

This will erase the memory in the AT870, including all applications and data files found in the object store (user store).

A Hard reset is a complete reset of the PDA in which all applications are forcibly closed and working RAM and files are cleared.

Hard Reset Procedure. To perform a Hard reset, simultaneously press the **<Reset>** key with the stylus while pressing the **<power>** key.

After Hard Reset.

When a PDA goes through the Hard reset sequence, it clears the working RAM and initializes the file system.

- The splash screen will appear shortly.
- You will be asked to recalibrate the touch screen. Press the **<ESC>** key to circumvent recalibration.
- The desktop appears with the application shortcuts on the screen.
- The custom settings in the registry are persistent.
- The RF Network PC Card if present, connects to the network system.
- The application saved in Flash Disk will not be deleted after cold reset (refer to section 5 Flash Disk)

5. Flash Disk

In addition to the RAM-based storage standard on Windows CE .NET terminals, the AT870 is also equipped with a **Flash Disk**, and all the application and data in the Flash Disk can be persisted in its own condition after the hard reset. From this point of view, it is a kind of very useful method to keep important application and execute user's own application automatically after the hard reset.

To save your application program, please keep these following steps in your mind.

5.1 Hard reset

1. At first copy an execute file you want to re-execute.
2. **Double-tap My Device > Flash Disk > Open Start folder > Open Hard Reset folder**
3. Paste the copied file in the **Hard Reset** Folder.

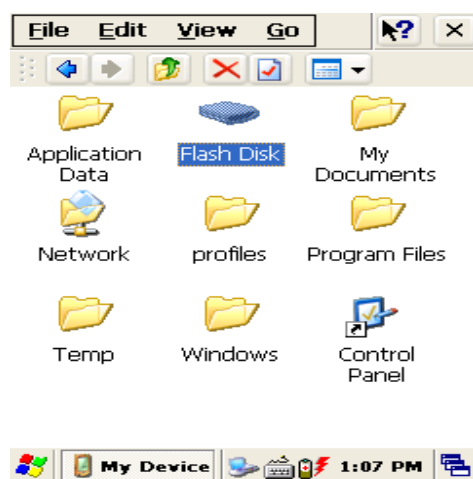


Figure1. Click Flash Disk

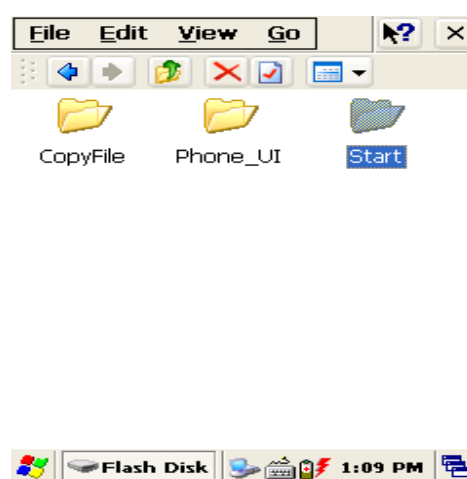


Figure2. Click Start folder

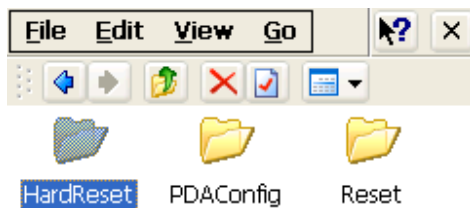


Figure 3. Open the HardReset folder

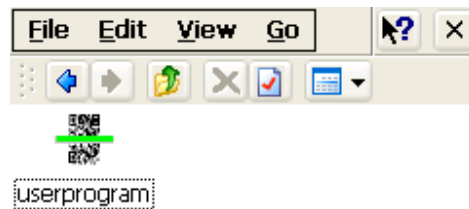


Figure4. An application in the HardReset folder

If you don't want to execute the application copied in the Flash Disk, after the hard reset is performed, press the "Fn" key during the hard reset.

5.2 Warm reset

1. At first copy an execute file you want to execute after warm reset.
2. **Double-tap My Device > Flash Disk > Open Start folder > Open Reset folder**
3. Paste the copied file in the **Reset** folder.



Figure 5. Open Reset Folder



Figure 6. An application in theReset folder

If you don't want to execute the application copied in the Flash Disk, after the Warm reset is performed, press the "Fn" key during the Warm reset.

5.3 Return back to the existing place

When a PDA goes through the hard Reset sequence, it clears the working RAM and initializes the file system, but because of Flash Disk you can make your files return back to their existed place after the Hard Reset get performed. This method is also very useful to configure your system without any action after the hard Reset.

To make files get replaced:

Copy files you want to replace after the hard reset.

Double-tap My Device > Flash Disk > Open CopyFile



Figure 7. Click Copy File



Figure 8. Copy files you want to replace

To make your files return back to the background screen (\Windows\Background) after Hard Reset, paste your Files into the Desktop folder.

To make your files return back to programs (\Windows\Programs) folder after Hard Reset, paste your Files into the Programs folder.

To make your files return back to Windows (\Windows) after Hard Reset, paste your Files into the Windows folder.

6. Registry Backup

Your AT870 is preparing the Registry Backup program for solution to save the user's registry. This is a very useful method to restore your AT870, when you perform the hard reset, and even if it is discharged completely.

The main function of registry:

1. Makes connection between WLAN and AP.
2. Execute RegistryBackUp program and save registry.
3. Restores the connection between WLAN and AP after hard or soft reset.

To save registry:

Tap **My device > Windows > Double-tap Registry Backup**

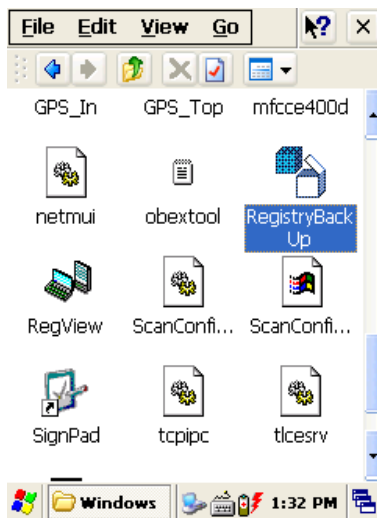


Figure 1. Registry BackUp

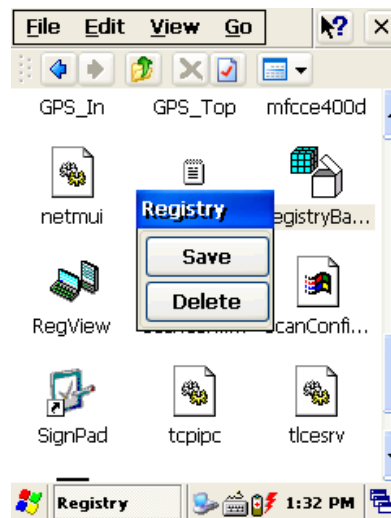


Figure 2. Save or delete registry

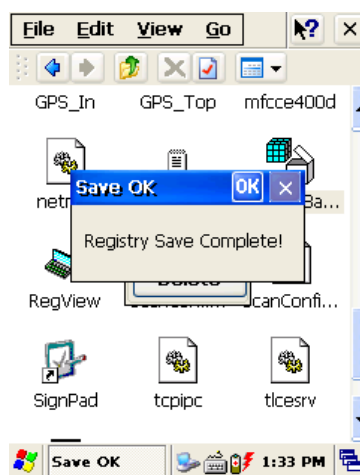


Figure 3. Registry Save

7. Using the keypad

The keypad is useful to input data and most of the keys on the keypad have more than one function. Try to input data with the keypad after know how to use it and keep the intimate knowledge like following tips in your mind.

7.1 Change current character

To change the current input character type, press the **<key>** key, than you can see the changed current key type like following steps:

Numeric > Lowercase > Uppercase > Special

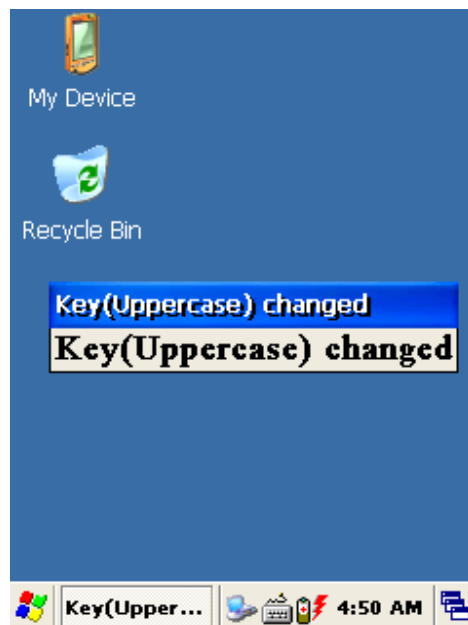


Figure4. Changing Current Character

7.2 Inputting the data

Numeric Mode: After making your choice to the Numeric Mode through the **<key>** key, and just press from 1 to 10 numeric keys.

Alpha Mode: In alphabetical order, there are 2~3 letters per key.

To input the first letter, press the key you want input one time, and to input the second and third letter, press the key how many times as the letter is ordered on the key continuously.

Special character: After making your choice to the **Special** Mode through the **<key>** key, press the key that has special character you want to input.

7.3 Setting device though the <Fn> key

Press <Fn> + other keys simultaneously to activate follows.

Table3.key describe

Fn + Key	Function
Navigation <Up> (Left)	Increase sound.
Navigation <Down> (Left)	Decrease sound.
KBD	Execute App1 program.
App1	Execute User Program program.(Ref. Control Panel - >Button)

Setting App

To execute the program designated by user directly:

Tap **Start** > **Control panel** > **Application Buttons** and designate **App1** as you want to execute anytime.

KBD button: you can make the touch screen display the input panel program directly to press the KBD button on the front of the AT870.

8. Using the stylus

The stylus is located next to the Battery pack on the right rear of the PDA. The stylus on the PDA is the equivalent of the mouse on a PC.

Warning: Never use a pen, pencil, or other sharp object on the AT870's touch screen display. Use only the supplied stylus or plastic-tipped pens intended for use with a touch screen-sensitive display.

Use the stylus to:

- *Navigate the touch screen display.
- *Select characters in the soft input panel (SIP).
- *Select applications from the desktop or system tray.
- *Select buttons, tabs, fields and text within applications and dialog boxes.

Chap 2. Windows Program

This chapter introduces Microsoft Windows Mobile 5.0 for Pocket PC. While using the SMARTERMINAL Mobile Computer, keep these key points in mind:

- 1) Tap **Start** on the **navigation bar**, located at the bottom of the screen, to quickly move to programs, files, and settings.
- 2) Tap and hold an item to see a **pop-up menu** containing a list of actions you can perform.

1. Basic Information

1.1 Task Bar and Command Bar

The task bar is located at the bottom of the screen. It displays the active program and current time, switch to programs, input panel, and battery status.

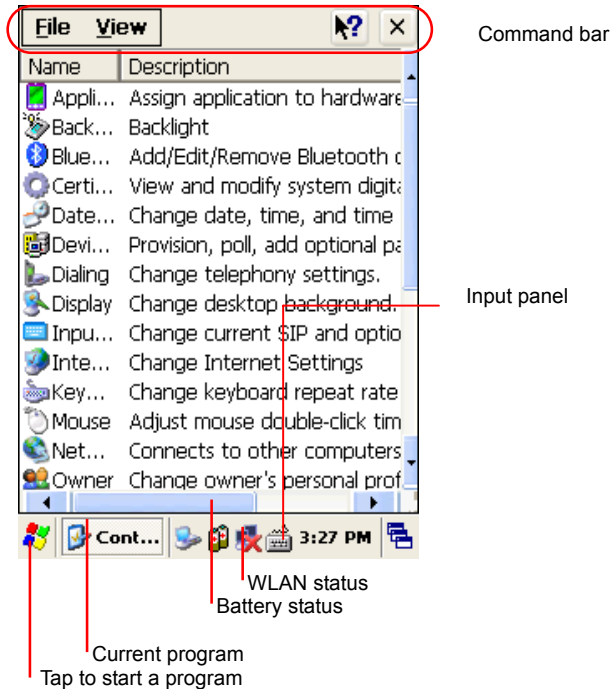


Figure 1. Task Bar and Command Bar

Use the command bar to perform tasks in programs. The command bar includes menu names, functions.

1.2 Pop-up Menus

Use pop-up menus to quickly perform an action on an item. For example, you can use a pop-up menu to delete or copy of an item. To access a pop-up menu, tap and hold the item on which you want to perform the action. When the menu appears, tap the action you want to perform, or tap anywhere outside the menu to close the menu without doing the action.

2. Executing a Program

When you turn on the AT870 for the first time, you can see the following start screen. Try to double-tap **“My device” Icon > windows > Program > tap an icon** you want to execute.

You can also display it by tapping the **Start** flag at the bottom left of your display.



Figure 2. Executing a Program to use

Start Flag

3. Entering information

You can enter information on your AT870 in several ways, depending on the type you have and the program you are using.

3.1 Using the Onscreen keypad

Use the input panel to enter information in any program on your AT870.

You can both type using onscreen keyboard or write using transcriber.

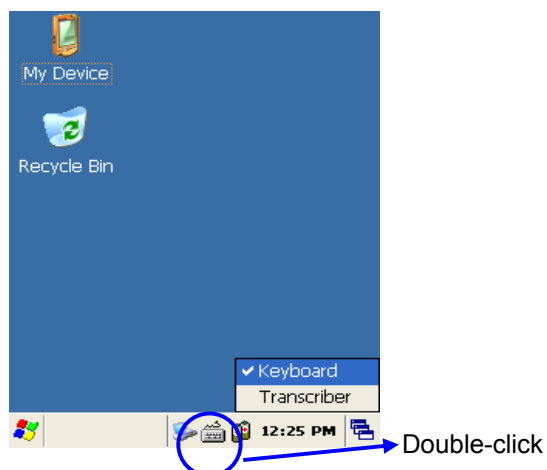


Figure 3-1. Selecting SIP menu

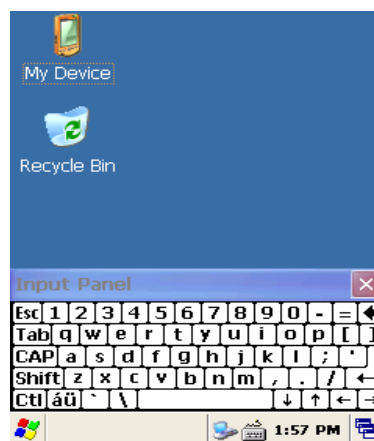


Figure 3-2 Popping-up SIP

To make pop-up menu appears, double-tap the keypad icon on the taskbar.

To make soft input panel (SIP) popped up, tap the keypad icon on the taskbar, or press “KBD/”) “key on the keypad.

To see Soft Keyboard Option:

Tap Start > Settings > Control Panel > Input panel, select “keyboard” from the current Input method drop-down list, tap “option”, then adjust Options as you want to use.

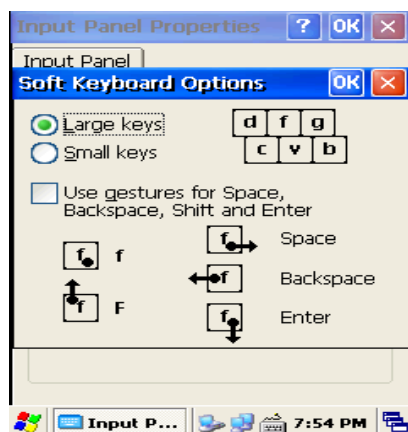


Figure 4. Keypad Option

3.2 Using the Transcriber

With Transcriber, you can write anywhere on the screen using the stylus just as you would on paper. Double-tap input panel icon, then tap Transcriber. After selecting, then write anywhere on the screen.

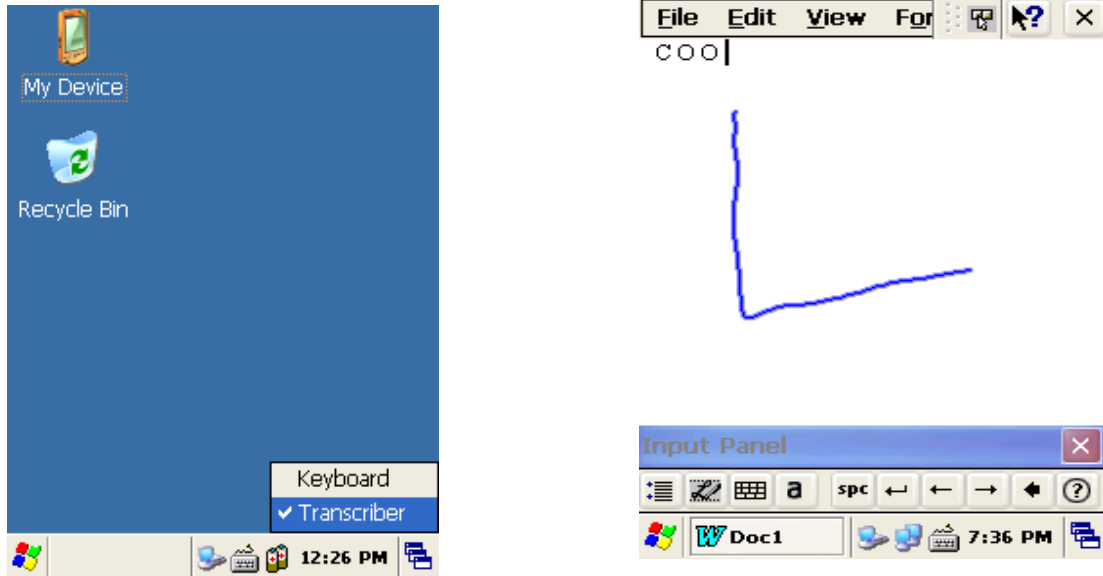


Figure 5. Using Transcriber in an application program

4. Microsoft ActiveSync

This section provides instructions on setting up the Host PC so that the PC can communicate with the PDA and the dock.

5.1 Using Microsoft ActiveSync

You can synchronize the information on your desktop with the information on your AT870. Synchronization compares the data on your AT870 with your desktop and updates both computers with the most recent information.

NOTICE: You must have Microsoft ActiveSync 4.2 or greater on your desktop before you can synchronize information with your AT870.

With ActiveSync

You can also do:

1. Back up and restore your AT870 data
2. Copy (rather than synchronize) files between your AT870 and desktop.
3. Control when synchronization occurs by selecting a synchronization mode. For example, you can synchronize continually while connected to your desktop or only when you choose the synchronize command.
4. Select which information types are synchronized and control how much data is synchronized.

For more information, please refer to the instruction of Microsoft ActiveSync.

5.2 Installing Microsoft ActiveSync on your desktop

Microsoft ActiveSync is a file transfer tool to synchronize the files on a desktop with the files on your PDA. The AT870 comes from the factory with ActiveSync loaded. If you have ActiveSync already

installed on your PC, make sure that you have v4.2 or higher.

To install Microsoft ActiveSync, complete the following steps on the PC:

1. Go to the Microsoft Windows CE .NET website and download the most current version of ActiveSync <http://www.microsoft.com/mobile/pocketpc/downloads/>. Install the most current version of Microsoft ActiveSync (v4.2 or greater) on the host PC.
2. Once ActiveSync is installed, it will attempt to connect to the AT870; allow it to fail on the first attempt.

5.3 Setting up a Partnership

ActiveSync file synchronization requires an ActiveSync partnership between the AT870 and the Host PC.

Setting up a Partnership.

1. Select the files in the synchronization configuration for the AT870.
2. Select Tools > Options from the ActiveSync command bar to configure the synchronization options.

Place the file to be synchronized in the Synchronization folder created in your My Documents directory. During the ActiveSync connection, all files in the Synchronization folder will be synchronized to the My Documents directory on the AT870.

5.4 Transferring Files

To transfer files, complete the following steps on the host PC:

1. Select **Start > Programs > Microsoft ActiveSync**
2. Double-click on the ActiveSync icon in the System Tool Tray.
3. After you have established a connection with your PDA, tap the Explore button at the top of the ActiveSync window (or select Explore from the File menu). Navigate to the target directory on your portable and copy the desired file by using the Copy/Paste method or dragging and dropping the desired file(s) into the folder.

5. Microsoft WordPad

Use Microsoft WordPad to create documents, such as letters or meeting minutes.

Select **Start > Programs > Microsoft WordPad**

The PDA comes with WordPad for Windows CE .NET installed from the factory. The following text and document file types are compatible with WordPad:

Text (*.txt), Word Document (*.doc), Rich Text File (*.rtf), WordPad (*.pwr)

When you transfer file types other than *.pwr to the Windows CE .NET device, it translates the files into a compressed Windows CE .NET file type.

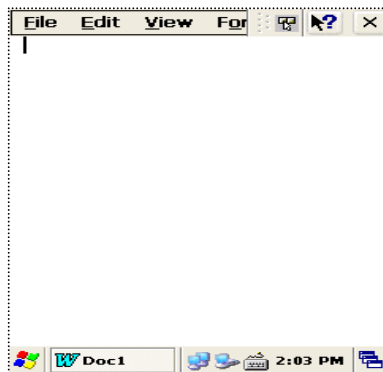


Figure 1. WordPad.

6. Window Media Player

Use Media Player on your desktop to copy digital audio and video files to your AT870. You can play Windows media and MP3 files on your AT870.

To display Media Player:

Tap Star > Programs > Media Player



Figure 1. Media Player

7. Internet Explorer

The PDA comes with Internet Explorer for Windows CE.Net installed

1. Open Internet Explorer by selecting Start > Programs > Internet Explorer.
2. To set a default home page, navigate to the desired default web page.
3. Select View > Internet Options from the command bar.
4. Enter the desired URL in the **Start Page** field.
5. **Press the OK button.**

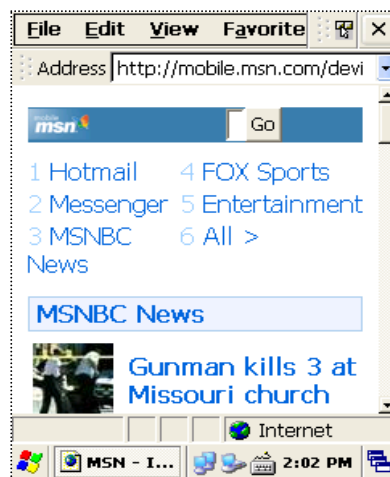


Figure 1. Internet Explorer

8. Context Sensitive Help

Microsoft Windows CE context sensitive help is available where ever a “?” button appears in the upper right hand corner of the window. To open context sensitive Help, select/tap the “?” in the upper right corner of most screens. Select/tap the desired item from the list of hot links.



Figure 1. Sensitive Help

Chap 3. Optional Module (Version 1.1)

The automatic identification and wireless network technology has helped users to keep their information, and makes IT engineers try various methods to develop modules used within mobile computer. The AT870 can also be supported with the optional modules for the needs of users. This section provides you with the information of the Optional Modules, and sources for additional product information. You need to confirm the follow information before you get the device that you want to use.

The Optional modules supported from SMARTERMINAL

Note: According to user's purpose or Upgrading for device, the additional information can be changed.

1. 1D barcode Scanner - AT870 option facts

This chapter introduces the AT870 built in with the 1D, 2D barcode Scanner program to assist you in making the most out of your AT870

1.1 1DScanner(Demo program)

You can execute **AT1DSMSScanner** to make sure that your AT870 scans barcodes exactly.



Figure 1. Scan Window for 1D or 2D image

1) To execute Scanner Diagnostics

Tap [start] -> [program] -> [Scanner] -> [AT1DSMSscanner]

2) Reading barcodes

1. Press the L/R scanning button or Fn2, KBD key to scan barcode. You can also tap the "Start" on the screen to scan a barcode when the laser beam is aimed to a barcode.

2. Make sure that your AT870 scans barcode exactly on the demo program.

* The scanned data will be displayed on the screen, if your AT870 reads a tag exactly.

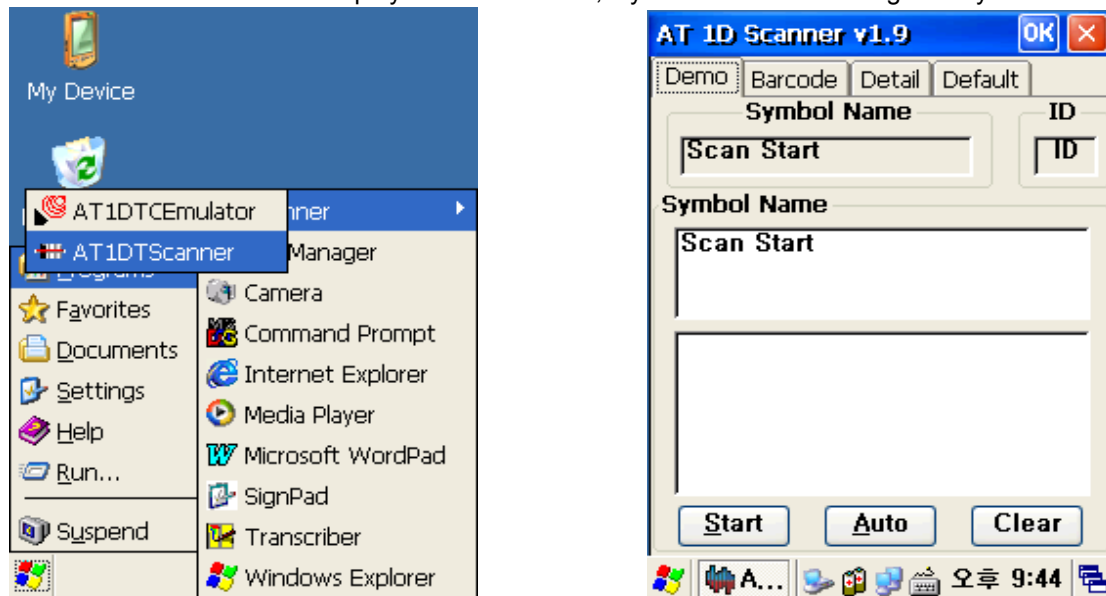


Figure 3. 1D Scanner Program

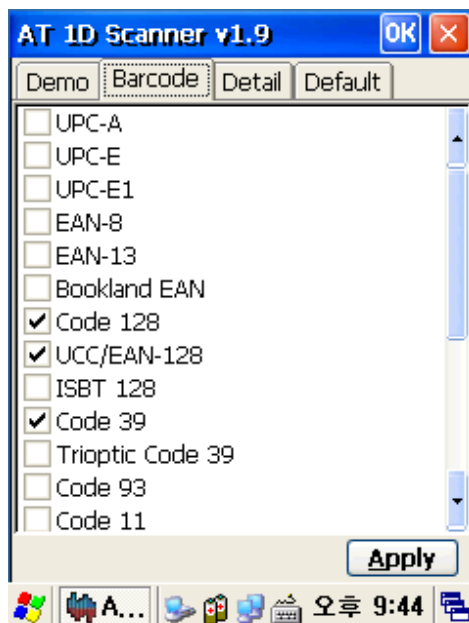


Figure 4. Select barcodes that you are using

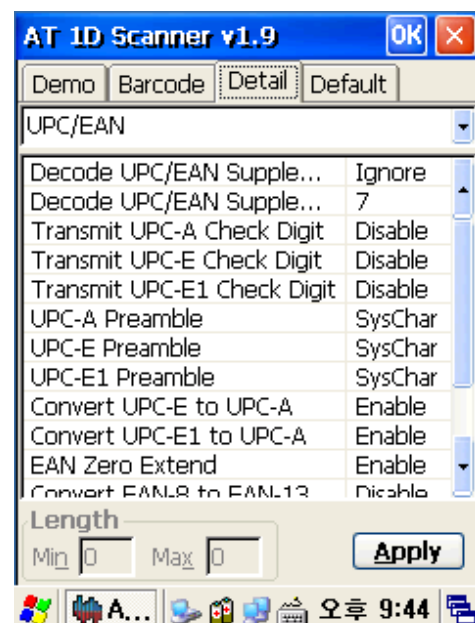
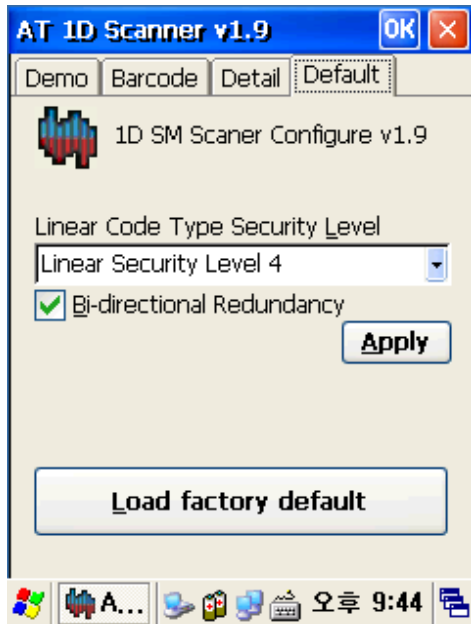


Figure 5. Detailed function



Optional Function:

Decides to format or not the result value to be added with its type.

Figure 6. Load factory default

1.2 Setting up the AT1DEmulator

You can input the barcode value you scanned in any application program that has a cursor after setting the AT1DEmulator. Like an input device, the AT1DEmulator makes data displayed in an application program (see the following figure)

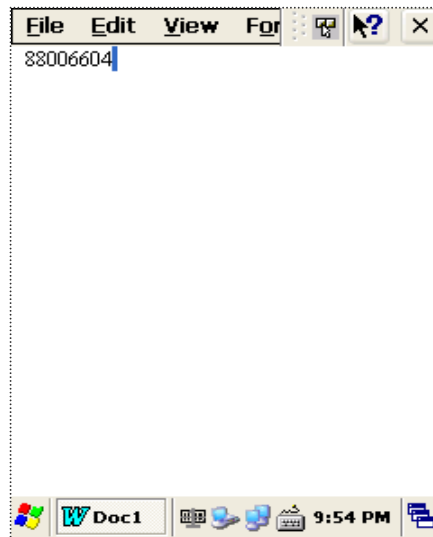


Figure 8. Barcode value in the WordPad Program

1) Using the AT1DEmulator

Because the AT1DEmulator can apply to all application programs that have a cursor such like Web program, Wordpad and others, you can input the scanned data directly without coding any application program.

2) To executing Emulator

Tap [Start] -> [Program] -> [Scanner] -> [AT1DTCEmulator]

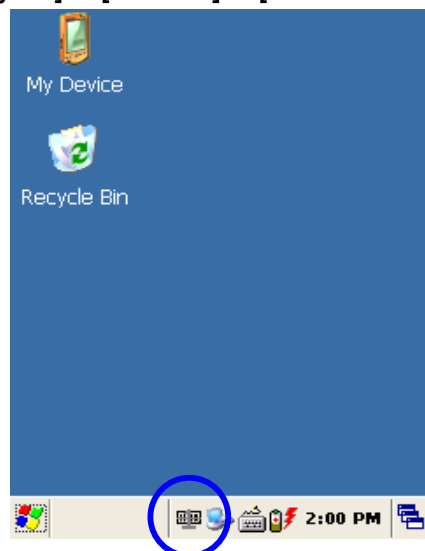


Figure 9. AT1DTCEmulator.exe -> Tap this AT1DTCEmulator Icon

3) Setting the Emulator

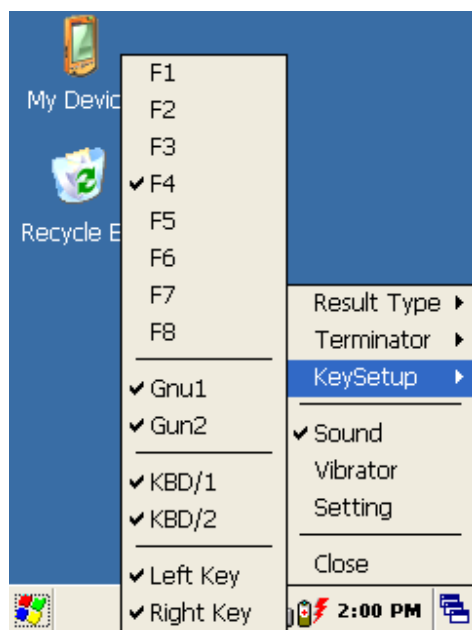


Figure 11. Setting Menu

1. Result Type

There are 2 kinds of method to print the scanned barcode data where a curser is pointing.

- A. **Keyboard Event** : Print the scanned barcode data like input Keyboard
- B. **Copy & Paste** : Print the scanned barcode data with Clipboard
- 2. **Terminator**
You can set the termination code at the end of Barcode Value to tap "Terminator".
 - A. **None** : No input the termination code.
 - B. **CRLF(Default Setting)** : Carriage Return & Line Feed (Enter code)
 - C. **Space** : Input Space code.
 - D. **Tab** : Input Tab key code.
- 3. **KeySetup**
You can make Hardware keys set to aim the lager beam.
 - A. **F1 ~ F8 Key** : press those keys on the keypad to read barcode after setting.
 - B. **Gun1, Gun2** : Set for the gun-typed AT870 .
 - C. **KBD/1, KBD/2 key** : Same with the F1 ~ F8 Key
 - D. **Left Key, Right Key** : Same with the F1 ~ F8 Key
- 4. **Sound** : set the sound On/Off after Scanning Barcode
- 5. **Vibrator** : set the Vibrator On/Off after Scanning Barcode
- 6. **Setting** : NO use.
- 7. **Close** : Make Emulator Program closed

2. 2D barcode Scanner - AT870 option facts

2.1 Reading 2D barcode & Symbology Setting

You can execute **AT2DScanner** to make sure that your AT870 scans barcodes exactly.

1) Executing Scanner Diagnostics

[Start] -> [Programs] -> [Scanner] -> [AT2DScanner]

Note: If you don't have AT2Dscanner.exe(Ver 2.0) File, please look for our staff.

2) Reading barcode

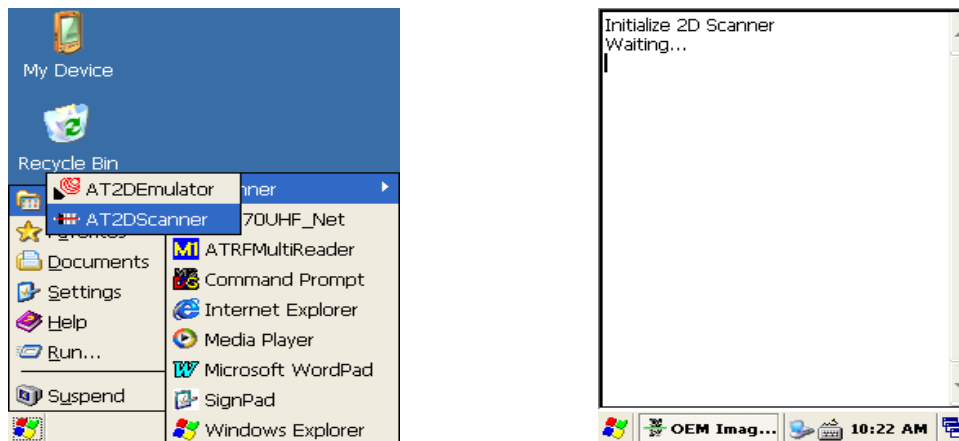


Figure 1. Wait till the program is initialized.

1. Press the L/R scanning button or Fn4, KBD key to scan barcode. You can also tap the "Start" on the screen to scan a barcode when the lager beam is aimed to a barcode.
2. Make sure that your AT870 scans barcode exactly on the demo program.

- * The scanned data will be displayed on the screen, if your AT870 reads a tag exactly.
- * If you stop scanning before your AT870 reads a tag completely – An abnormal sound comes out.

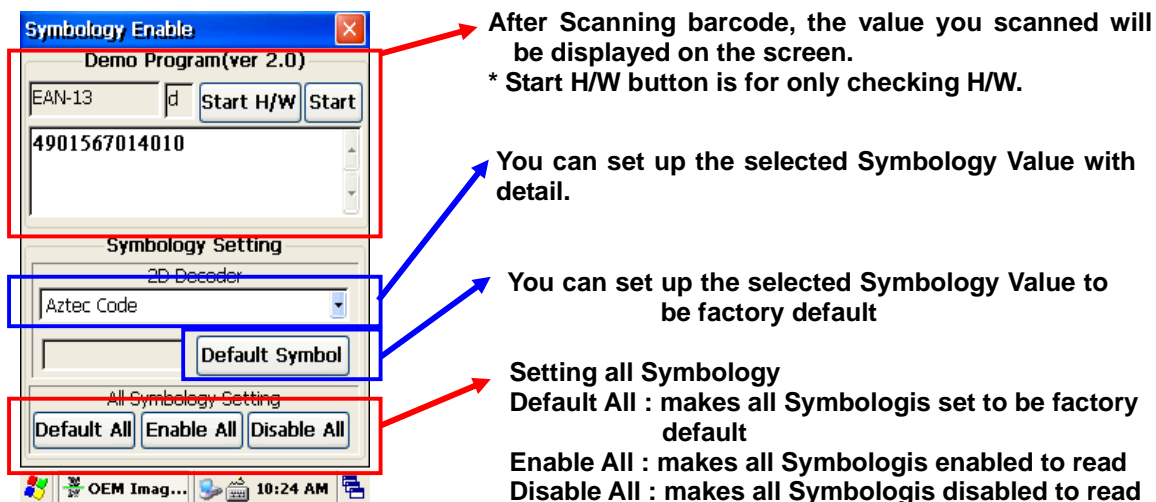


Figure 2. 2D Scanner Function

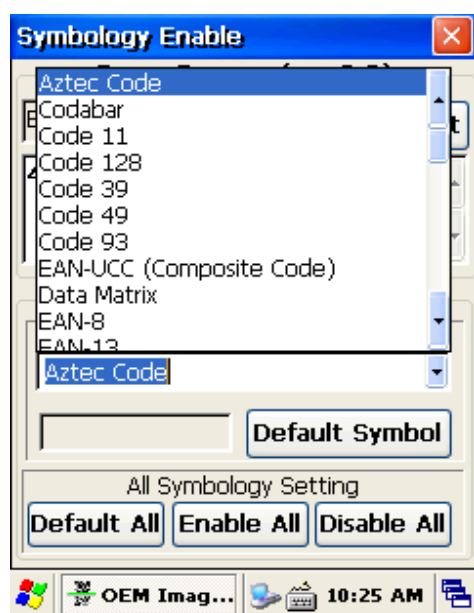


Figure 3. Select symbology

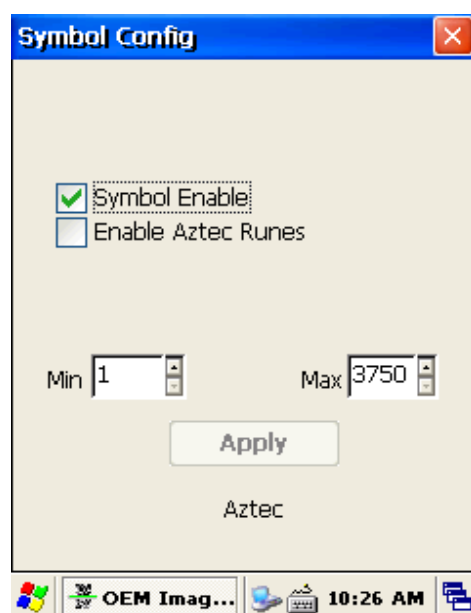


Figure 4. set up symbology with detail.

2.2 Setting the AT2DEmulator

You can input the barcode value you scanned in any application program that has a cursor after setting the AT1Demulator. Like an input device, the AT1Demulator makes data displayed in an application program (see the following figure)

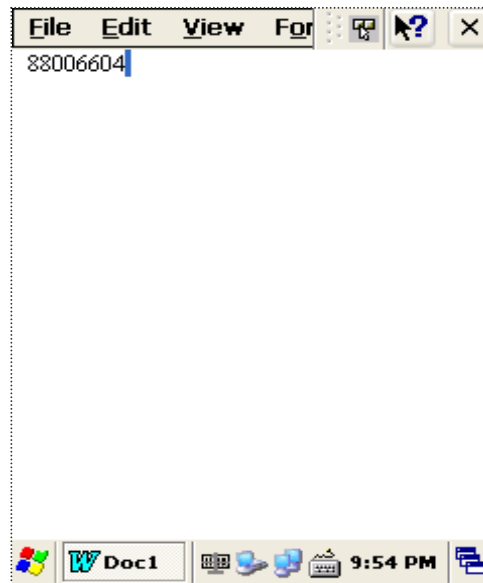


Figure 5. Barcode value in the WordPad Program

1) Using the AT2DEmulator

Because the AT2DEmulator can apply to all application programs that have a cursor such like Web program, Wordpad and others, you can input the scanned data directly without coding any application program.

2) To executing Emulator

Tap [Start] -> [Program] -> [Scanner] -> [AT2DTCEmulator]

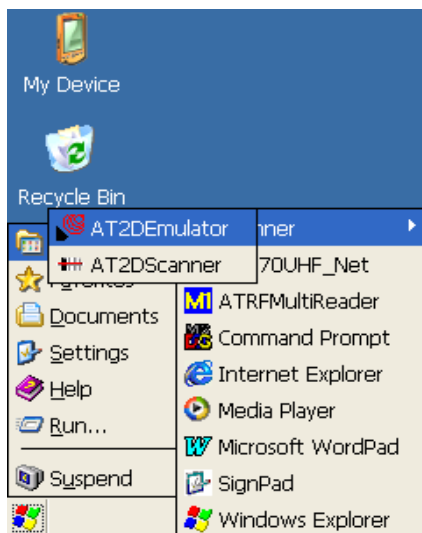


Figure 6. AT2DEmulator.exe

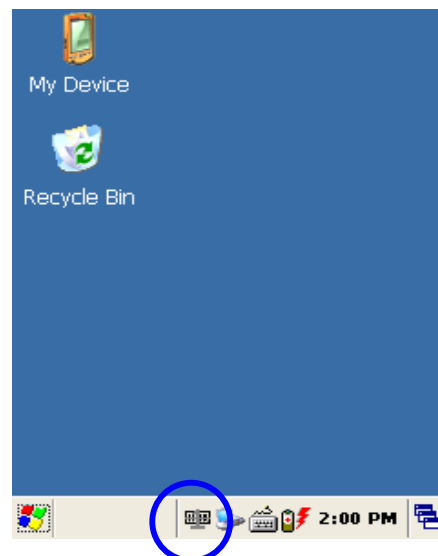


Figure 7. Tap this AT2DEmulator Icon

3) Setting the Emulator

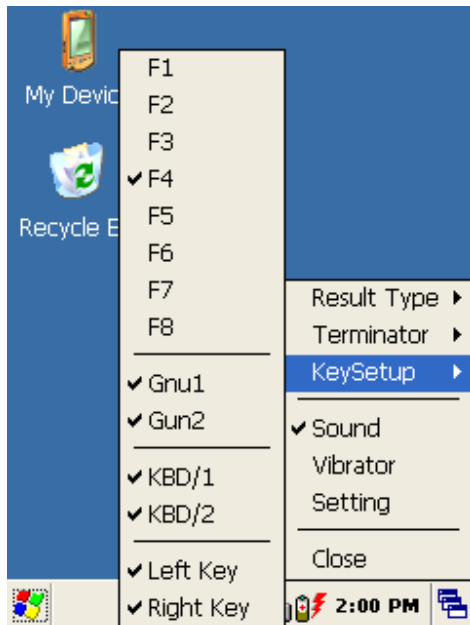


Figure 8. Setting Menu

1. Result Type

There are 2 kinds of method to print the scanned barcode data where a cursor is pointing.

- A. Keyboard Event : Print the scanned barcode data like input Keyboard
- B. Copy & Paste : Print the scanned barcode data with Clipboard

2. Terminator

You can set the termination code at the end of Barcode Value to tap "Terminator".

- A. None : No input the termination code.
- B. CRLF(Default Setting) : Carriage Return & Line Feed (Enter code)
- C. Space : Input Space code.
- D. Tab : Input Tab key code.

3. Key Setup

You can make Hardware keys set to aim the laser beam.

- A. F1 ~ F8 Key : press those keys on the keypad to read barcode after setting.
- B. Gun1, Gun2 : Set for the gun-typed AT870 .
- C. KBD/1, KBD/2 key : Same with the F1 ~ F8 Key
- D. Left Key, Right Key : Same with the F1 ~ F8 Key

4. Sound : set the sound On/Off after Scanning Barcode

5. Vibrator : set the Vibrator On/Off after Scanning Barcode

6. Setting : NO use.

7. Close : Make Emulator Program closed

2.3 Scanning Barcode

To use the scanning function, complete the following steps:

1. If you have not already done so, remove the protective plastic film before using devices equipped with a laser scanner.

Warning

Some AT870 come with laser scanners that scan using laser light. **Never look directly into the laser light or shine the laser light into the eyes.**

2. **Select Start > Programs > Scanner > AT1DScanner** to open the scanning application. This application runs in the background and only shows up as bar code icon in the system tray.

3. Aim the scanning beam at the center of the bar code.

- Position the device close to bar code when scanning small bar codes.
- Position it at a distance when scanning larger bar codes.
- The scanner stops scanning after you release the key or after five (5) seconds.

Figure 2. Scanning Beam Positions

Correct Scanning Position



Incorrect Scanning Position



Wrong ways to scan barcode

4. Press the Right or Left **<Scan>** key. The scanner scans as long as you hold the key or for five (5) seconds.

5. Upon reading a bar code, the device beeps and the vibrates until the trigger is released or after five (5) seconds. The beep tone and Vibrates indicate a good read.

***If the bar code scan failed, adjust the reading angle or distance. Make sure that the scanning beam scans across all bars of the bar code.**

6. The bar code data is entered in the current application. Once a bar code is read successfully, the scanner turns off automatically.

3. Wireless LAN - AT870 option facts

The AT870 is versatile mobile computer that you can add to your wireless LAN. It has an internal 802.11 b/g radio to transfer data using wireless communications. This section of the manual assumes that you have already set up your wireless communications network including access points.

Your AT870 supports TCP/IP network protocols. In a TCP/IP network, the AT870 communicates with a host computer directly using TCP/IP. The access point acts a bridge to allow communications in wireless networks.

3.1 Power on Wireless LAN

The default of Wireless LAN was set with “Wlan off” when your AT870 was manufactured at the factory.

To make wireless LAN on:

Select Start > Programs > AT570Wlan



Figure 1. Wireless icon

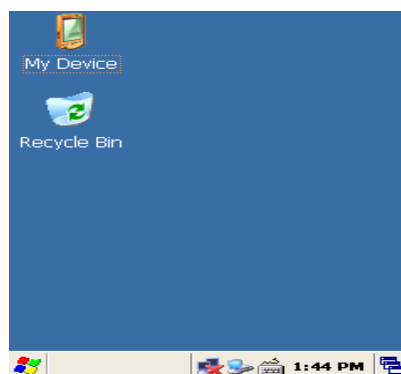


Figure 2. Select AP

After selecting “Wlan On” the LAN icon appears on the control bar.

Connecting your AT870 to a network device:

Double tap LAN icon > tap Wireless Information.

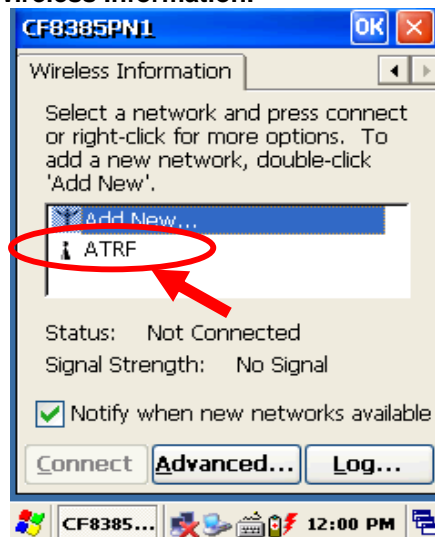


Figure 3. Select AP

Select a network that your AT870 has scanned in the list box, and tap Connect after selecting the network, than the network will be connected to your AT870.

3.2 IP Information

To see IP Information:

Double-tap the **LAN icon**, and tap **IP Information tap**.

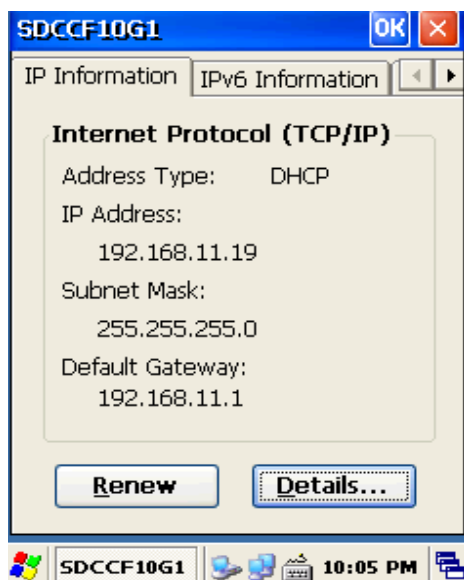


Figure 4. IP Information

3.3 Setting manually

You can also connect your AT870 to a network with manual method in the Wireless Properties.

To set wireless LAN in Wireless Properties:

Double tap **WLAN icon** > tap **WLAN Tap** > Input data > Tap "OK"

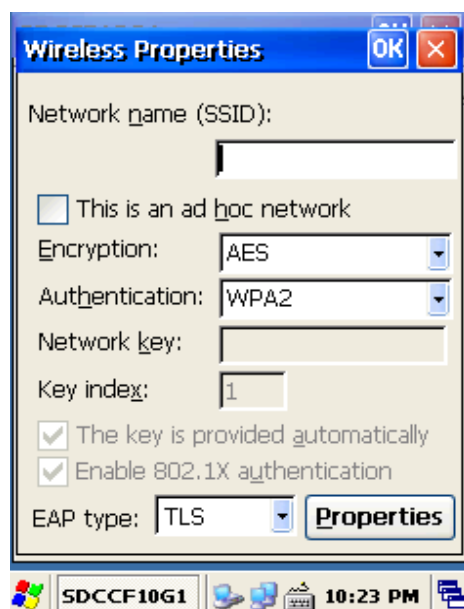


Figure 5. Wireless Properties

3.4 Power Off Wireless Off

To make wireless LAN Off:

Press FN key and Esc key at the same time, and select WLAN Off

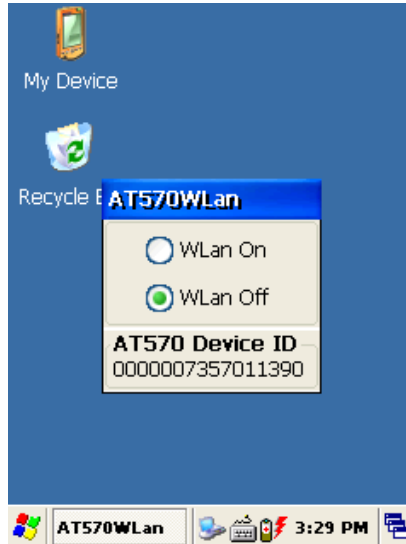


Figure 6. Wireless Off

4. Bluetooth - AT870 option facts

Your AT870 can optionally be built in with the Bluetooth Manager program to communicate with wireless printer. In the Bluetooth Stack Service, your AT870 only supports SPP (Serial Printer Profile)

To make sure your bluetooth device, keep these following tips in your mind.

4.1 To enable Bluetooth

Bluetooth is not started by default after a clean-boot is performed. It is because of your AT870 retains the bluetooth state when a clean-boots are performed. For example, if Bluetooth was enabled before a clean-boot, Your AT870 boots up with the Bluetooth state enabled and Bluetooth virtual COM ports registered. Reactivate the connections manually as the system does not do them. If Bluetooth was disabled before a clean boot was performed, the AT870 boots up with disabled.

To turn on Bluetooth:

Double tap My Device > Windows > Tap Bluetooth icon

4.2 Bluetooth Manager

Bluetooth Manager is a program that makes your AT870 scan SPP device and connect to a device that you want use in its scanning range.

After connecting your AT870 to SPP device through Bluetooth Manager, the AT870 supports Virtual Com Port (COM3) and sets up the Baud-rate as 9600 bps.

4.3 Connecting Bluetooth Printer(SPP)

BT-Manager is coded only for Hardware support to connect AT870 to a Bluetooth Printer.

To start BT_Manager:

Tap Start > Program > Tap BT_Manager

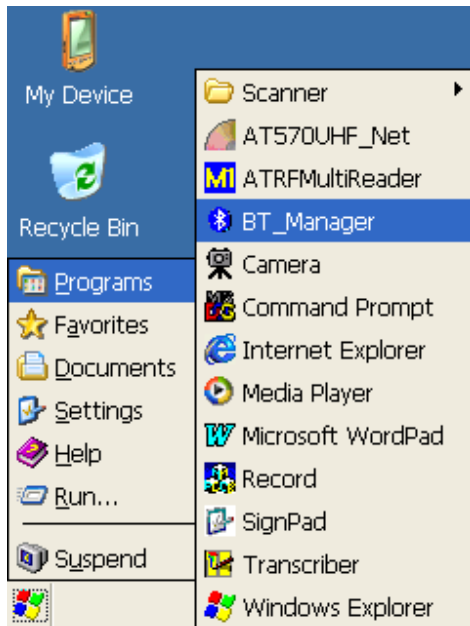


Figure 1. Executing BT_Manager

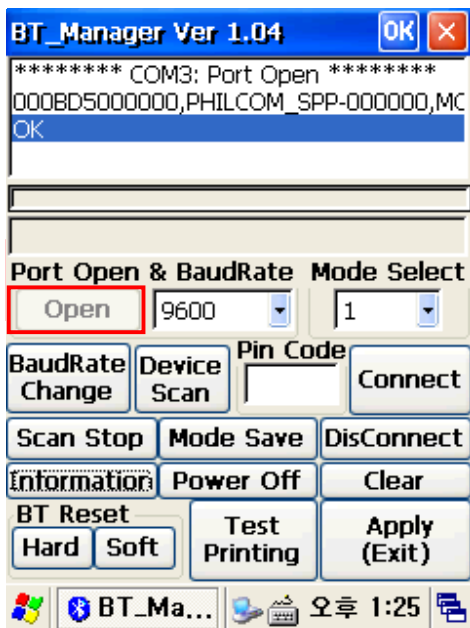


Figure 2. Step-1 COM3,9600,Mode:1 Open” Click

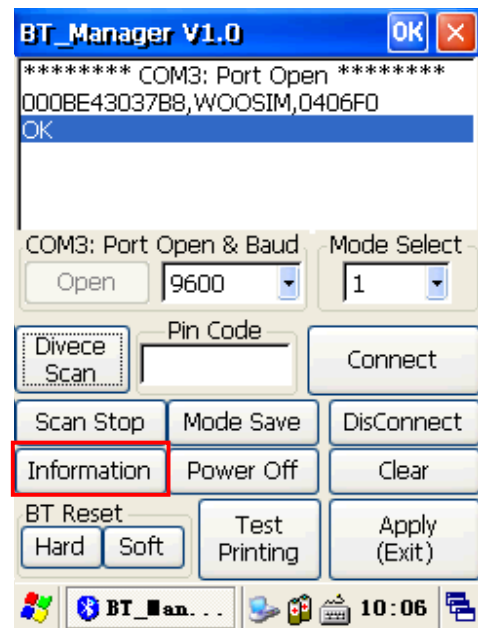


Figure 3. Step-2 Bluetooth Device Information

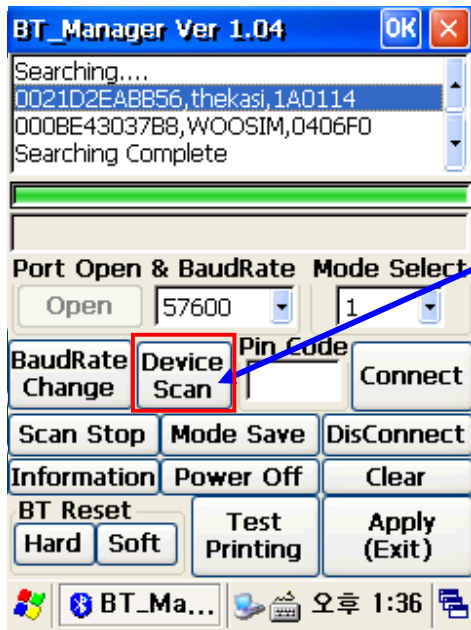


Figure 4. Step-3 After scanning device

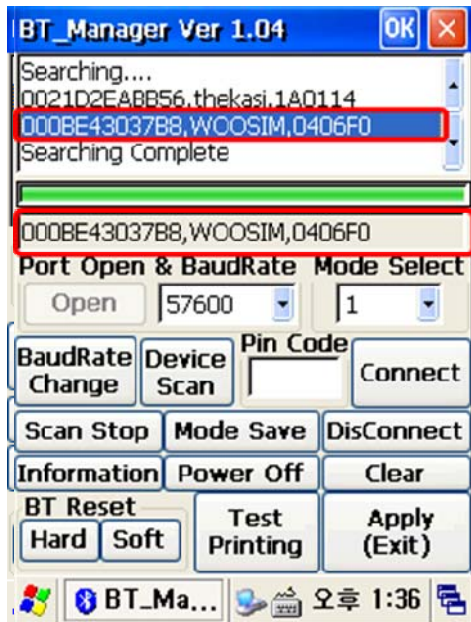


Figure 5. Step-4 Selecting the Device

After the BT_Manager Scans Bluetooth SSP device, the information of scanned device will be displayed on the screen.

Note: If the BT_Manager has found out the printer you want to use before the “OK” message appears, and you want to stop scanning other printer, you can stop scanning other printer to click the “Scan Stop” button.

Connecting to a Bluetooth printer

From while SPP equipping which are searched must select the equipment which will use certainly

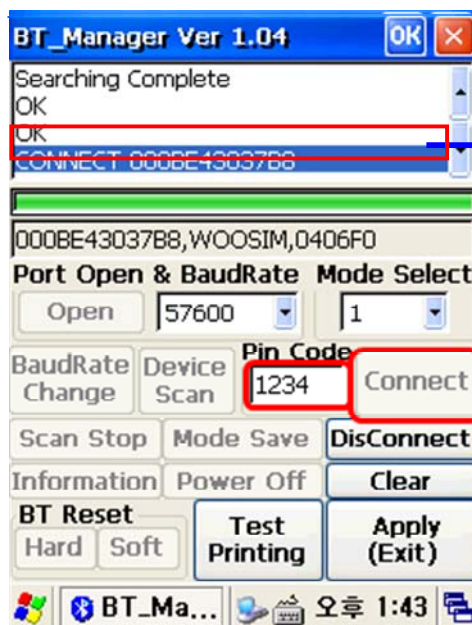
Selection specified equipment information of equipment rises to hour cotton down lower part text boxes under two clicks from in equipment list and comes.



1. From while equipping which is searched under using boill must select the equipment certainly.

2. Connect where when has become the equipment selection consecutively does a connection with SSP equipments.

Figure 6. Step-5 Press the “Connect” button



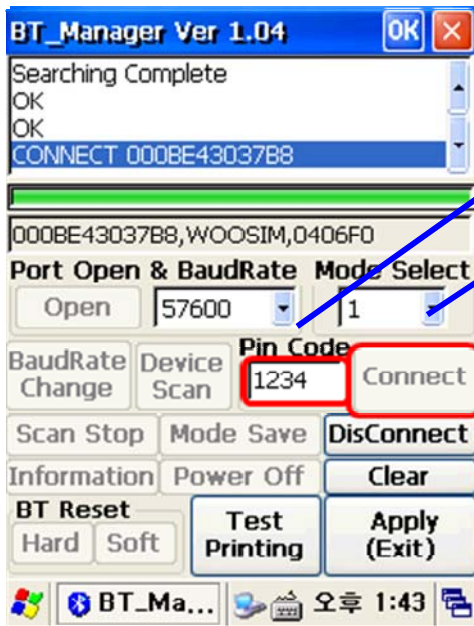
1. If your PDA is connected to a printer, you can see the connection message-“CONNECT xxxxxxxx”

2. To test printing click the “Test Printing” button.

3. Click the “Apply(Exit)” button to close BT_manager.

Figure 7. Step-6 With the equipment which is selected connection confirmation

※ Mode Save



1. picture 5 and identically
,searches SSP systems and selects.

2. Inputs Pin Code where the printer manufacture company provides.

3. Connect button and click connects.

4. Mode consecutively maintains Save buttons the connect state which is hardware. (Endures automatic connection rehabilitation)

5. (Exit) button Apply consecutively BT_Manager programs bell.

Figure 8. Step-7 Press the “Mode Save “after Checking up connection & Apply(Exit) Click

Automatic Connection Restoration: Your AT870 will get to be connected to a printer after the Step7. Make a mental note that BT-Manager is coded only for Hardware support to connect your AT870 to a printer. On this understanding you may know that AT870 will restore the former connection after the following case:

1. After you turn on your AT870 to restart.
2. After you perform a reset or hard reset activity.

Note: Use the BT_Manager, when you are under the following case:

1. To close BT_Manager after it is connected to a printer.
2. If you don't want to use the printer anymore, and stop to support power to the Bluetooth chip modulated in AT870 to save more power.
3. If you want to connect your AT870 to another printer.

4.4 Reference for Application Developer

Check up the connection of AT870 to a Bluetooth Printer after the step7

To control Bluetooth Printer with the user's application, you should set your AT870 as COM3 and 9600bps rate.

Application developer, if they need to make the program to control the Bluetooth printer, they must follow the below steps:

1. Make your AT870 connected to a Bluetooth Printer through the BT_Manager. the BT_Manager program is only for hardware connection support, so you will never use it as far as the Bluetooth Printer is not changed.
2. If you make program with the EVC++ Tool, you need to set the Port as COM3 and Baud rate as 9600bps.

Ex) EVC++ Source

- Open (Windows API CreateFile Function)

```
g_BT_Handle = CreateFile(_T("COM3:"),
```

```

        GENERIC_READ | GENERIC_WRITE,
        0,
        NULL,
        OPEN_EXISTING,
        FILE_ATTRIBUTE_NORMAL,
        NULL
    );

```

```

dcb.BaudRate          = CBR_9600;
dcb.StopBits          = ONESTOPBIT;
dcb.ByteSize          = 8;

```

- . Printing data from AT870 (Windows API WriteFile Function)

Make the Bluetooth Printer print the data from AT870 to use the Writefile function.

- . Reading data from printer (Windows API ReadFile Function)

Make AT870 read the data from the Bluetooth Printer to use the ReadFile Function

Ex) Bluetooth Data : MSR Data Etc...

Note: If there is some problem with your bluetooth printer when you use your program which is coded with the Library Function provided from the printer manufacturing company, you should contact someone working in that company for further information

Checking up the communication between the Bluetooth printer and the demo program

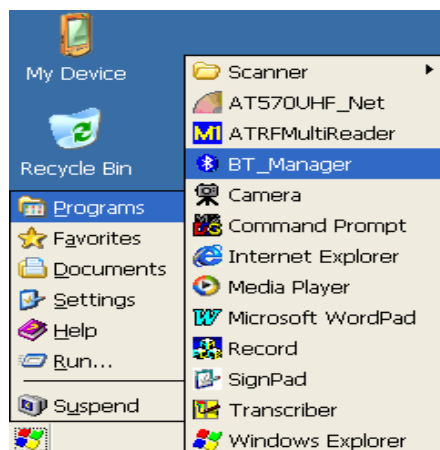
Try to type data with keyboard in the program that is displayed on the screen (Figure 18), or the demo program will transmit your data to the Bluetooth printer, than the printer will print the data. It is no matter to try this test even after turning on your AT870 when its power is off.

4.5 Disconnecting Bluetooth Printer(SPP) from AT870

Use the BT_Manager to disconnect the Bluetooth printer from your AT870, when you are under the following case:

1. To close BT_Manager after it is connected to a printer.
2. If you don't want to use the printer anymore, and stop to support power to the Bluetooth chip modulated in AT870 to save more power.
3. If you want to connect your AT870 to another printer.

Start > Program > Tap BT_Manager



To disconnect bluetooth printer from AT-570:

1. Execute BT_Manager.
2. Click the "Open" button.
3. Select 9600bps, and select 1 in the Mode Select box.
4. Click the DisConnect button.

Figure 9. Click BT_Manager

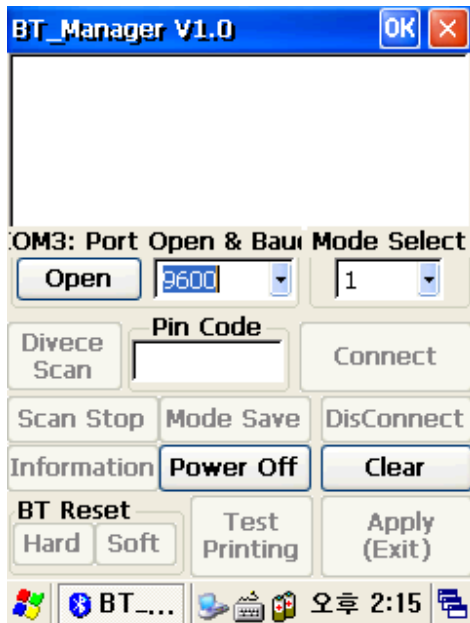


Figure 10. Step-1 Click COM3,9600,Mode:1 Open

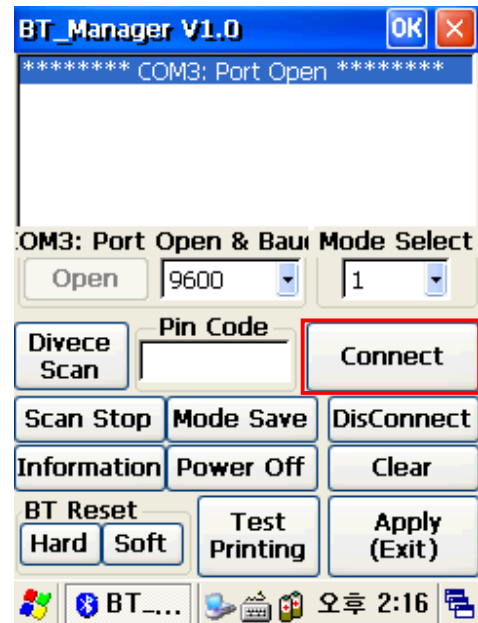


Figure 11. Step-2 Click “Disconnect”

Note : you can connect your AT870 to another printer after tapping the Disconnect button.

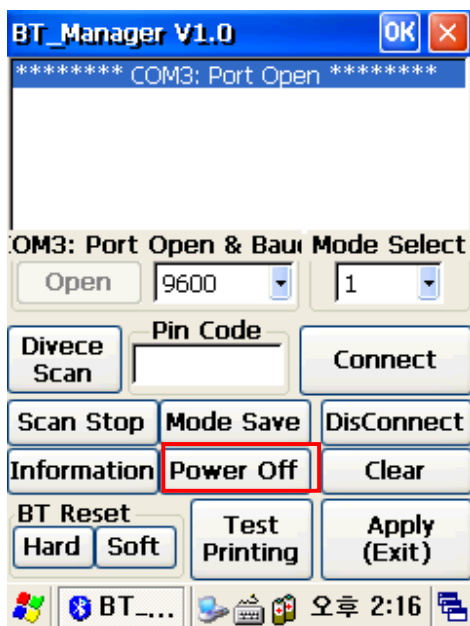


Figure 12. Step-3 “Power off” Click

Note : You should close the program after tapping the “Power Off” button, therefore you can use the program again anytime.

5. To save more power, press the “Power Off” button.

5. GPS Module - AT870 option facts

Options to install the GPS Module

GPS Module designed to be installed on the top of the AT870

5.1 Executing the GPS

To execute GPS:

Tap **start > program > GPS_xxx.exe**

5.2 Configuring the Port and Baud Setting for Executing the GPS

To use the GPS installed on your AT870, you need to make the GPS's power on. For that, please double-click the "GPS_Power_Init" -the EXE file that in the "Flash Disk". And then tap the GPS EXE icon, the following GPS screen appears.

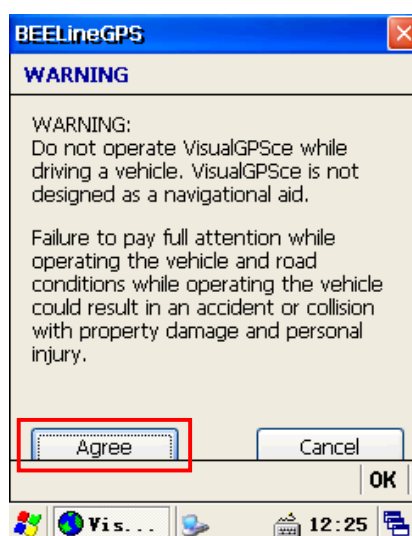


Figure 4. Executed GPS screen

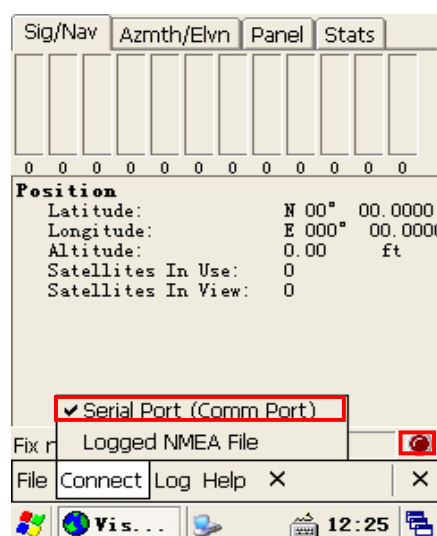


Figure 5. Comm Setting

If you tap the Agree tap in the figure 5, the Comm Setting screen appears. For executing the GPS, you need to configure the port and baud at first. Select the "connect" on the command bar, and select Serial Port(Comm Port) in the pop-up menu. And select these settings.

GPS port: COM6(GPS_Top.exe)

Baud: 9600 bps

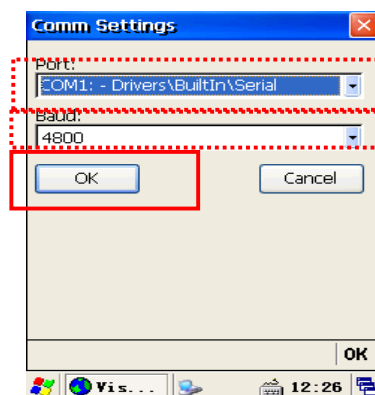


Figure 6. Comm Setting screen

Tap “OK” after configuring Port and Baud

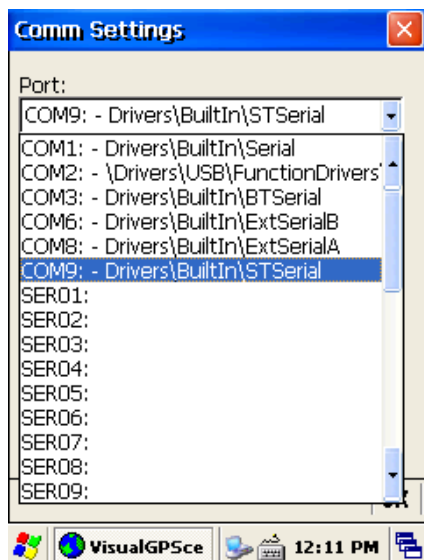


Figure 7. Com Port Setting

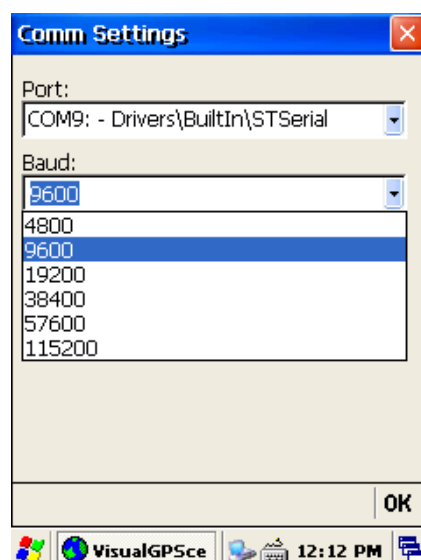




Figure 8. Baud Rate Setting

5.3 Checking the GPS status

After tapping “OK” if the program is operated normally, you can see the red lamp (see the  in the figure 26) glittering.

The data received appears in the part of the  (but according to the reception status it takes more or less time to access data.)

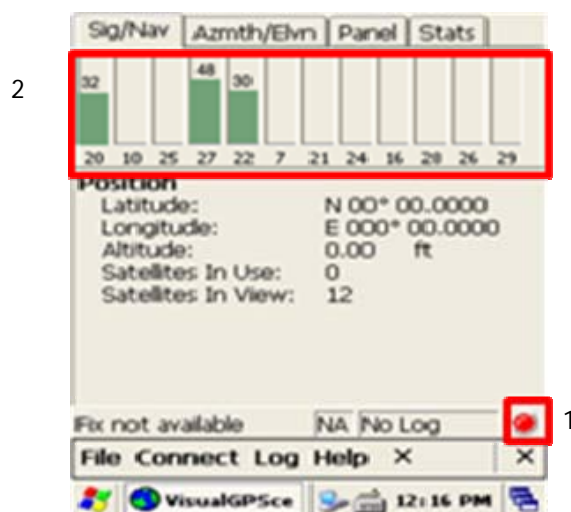


Figure 9. GPS Reception Status

Confirmation of receiving GPS data

1. Find an open place to check your GPS.
2. According to the actual environment, the time to receive data is different (about 3~10min)
3. After receiving GPS data once, it is more fast to receive GPS data than the first attempt .

6. Using Camera - AT870 option facts

6.1 To use your Camera:

Tap start > Program > Camera

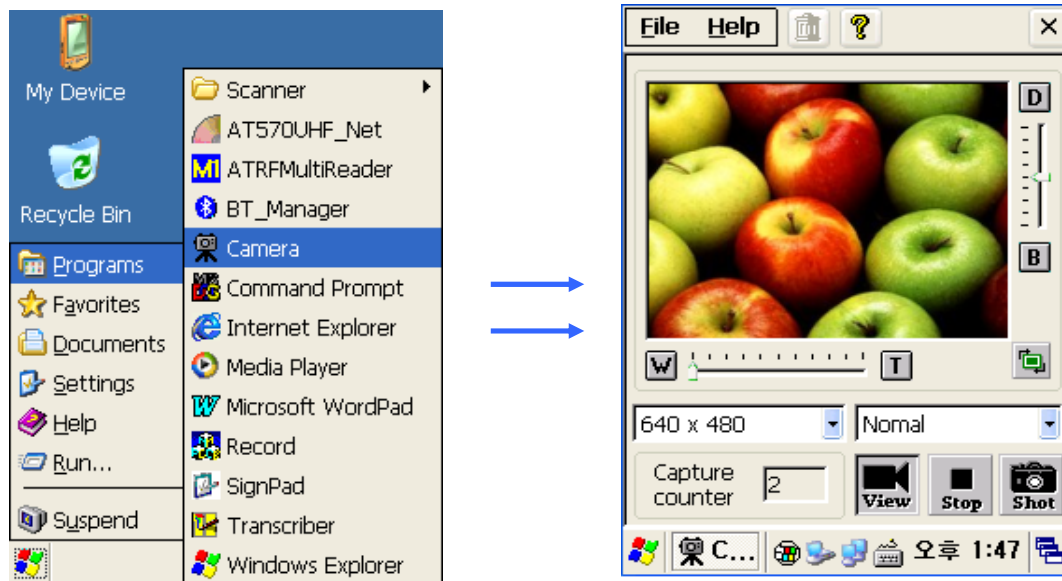


Figure 1. Executing Camera

Camera Screen

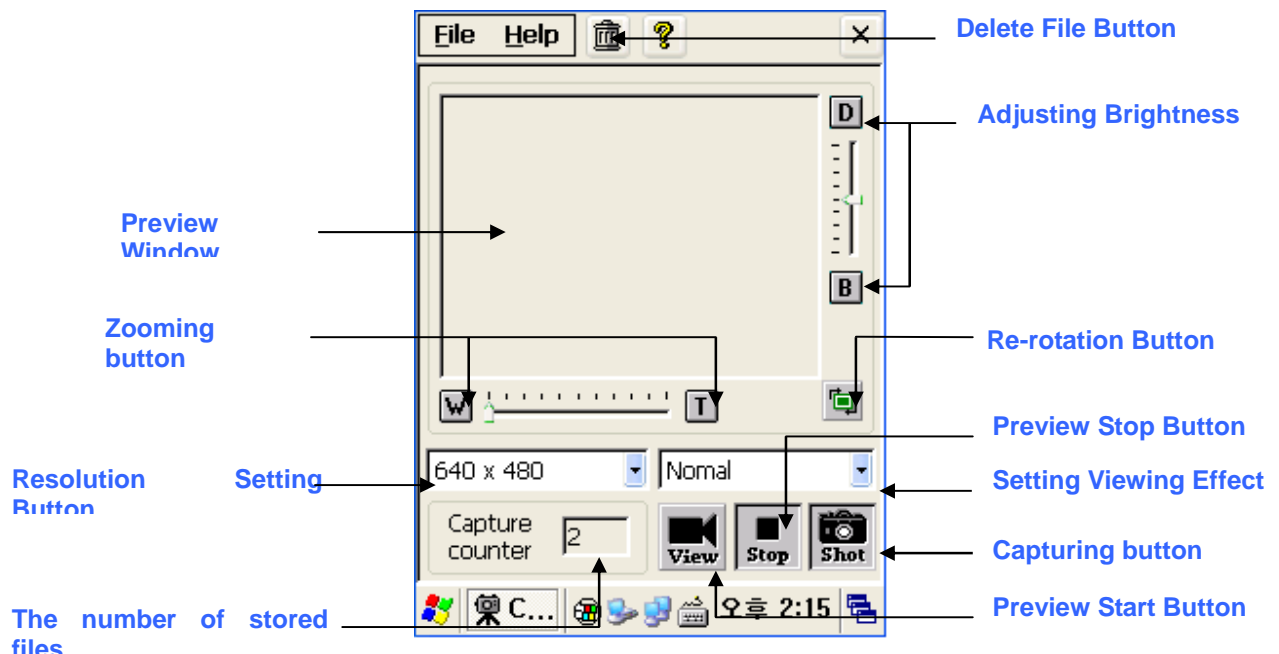


Figure 2 Camera Screen

7. 13.56MHz ATRF Multi (R/W) Reader - AT870 option facts

7.1 Leader type

According to RFID module establishments there is a type of two kind. ¹

[The internal organs style]

RF13.56, is a type where modules are established with the internal organs.



Figure 1. RF13.56 Module The internal organs style

7.2 MultiReader Read Write Possibility Diagnostics Execute

[Start] -> [Program] -> [ATRFMultiReader] Execute the program.

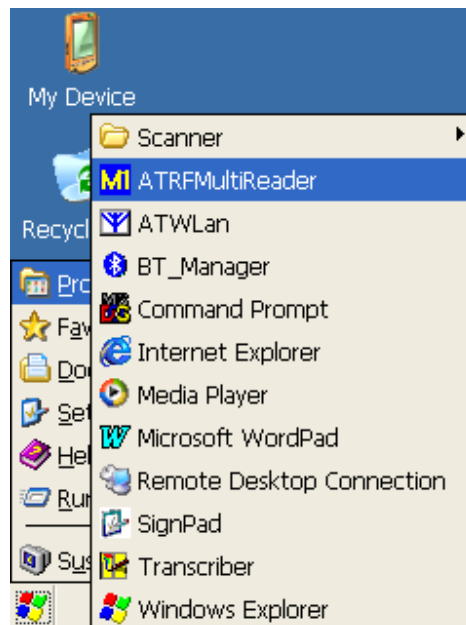
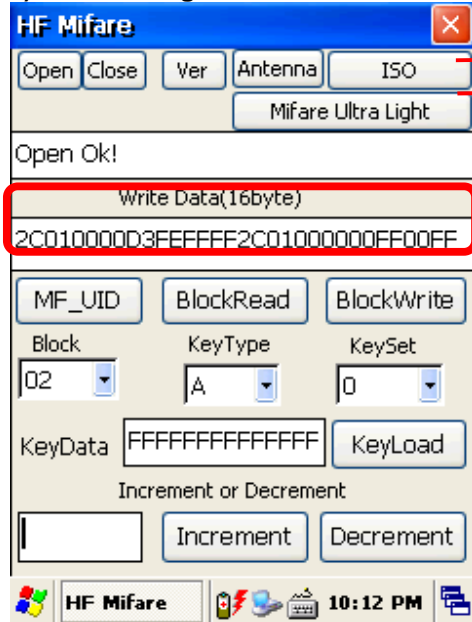


Figure 3. RFID Program execution

1) "Mifare" Tag



ISO: ISO-15693 The open does the tag window.

Ultra MF: Ultra Light Mifare The open does the tag window.

Version: Reads firmware information and comes.

Antenna : When the access doing in Mifare, the authentication height which uses in the leader/the lighter registration

MF_UID: Mifare Tag ID Read

Block Read: Block Data Read.

Block Write: Block Data Write

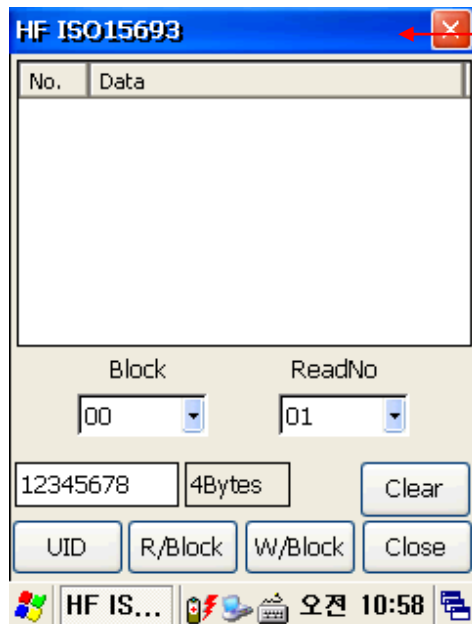
Keyload:

Increment: Price in block data.

Decrement: Reduce productions a price in block data.

Figure 4. Mifare

2) "ISO 15693" Tag



ISO-15693 Tag Window

UID: 15693 Tag ID Read.

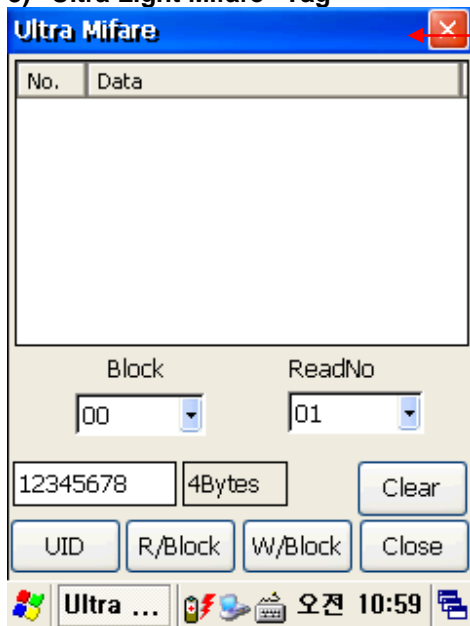
R/Block: 15693 Block Data Read.

W/Block: 15693 Block Data Write.

Clear: Erases a display screen coat data.

Figure 5. ISO 15693

3) "Ultra Light Mifare" Tag



"Ultra Light Mifare" Tag Window

UID: Ultra Light Mifare Tag ID Reading.
R/Block: Ultra Light Mifare Block Data Read.
W/Block: Ultra Light Mifare Block Data Write.
Clear: Erases a display screen coat data.

Figure 6. Ultra Light Mifare

8. UHF 900MHz(Read / Write)Program - AT870 option facts

8.1 UHF 900MHz(Read / Write) Program

The program which sees reads RFID tags of EPC Gen2 protocols and is a program which supports a writing.

[Gun Type]



Figure 2. Gun Type RFID Reader



Figure 3. Gun Type RFID Reader

[Gun handle mount]

You put the gun handle into gun connector & fix by gun locker.

[Gun handle desorption]

You pull gun locker & subtract gun handle..

1) Program execution

UHF in order to execute 900MHz(R/S) programs referring to the explanation the lower part, wishes.

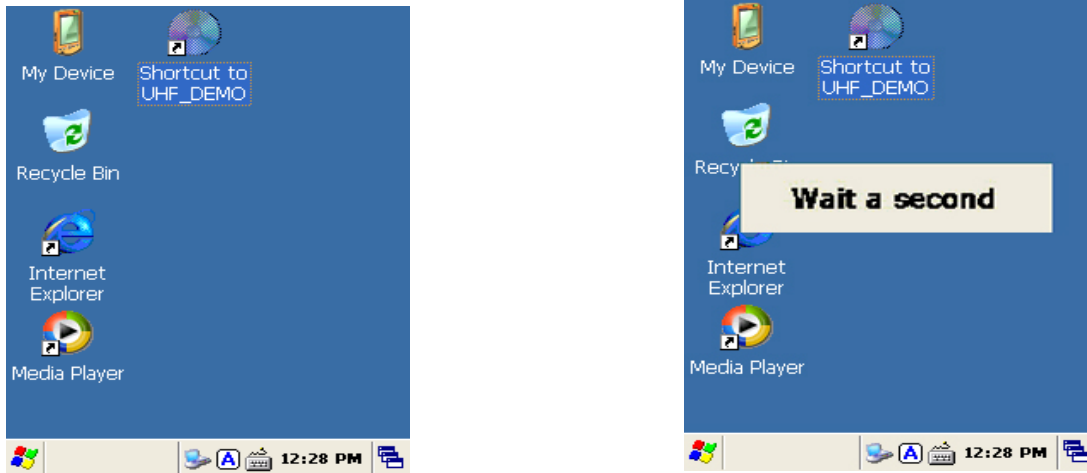


Figure 1. Demonstration program icon

1. Double click does the program icon which is by the character screen.
- 2 “Wait a second” after the message box which is appears the Maine menu appears.
3. or program **AT870 UHF_NET** double click and UHF Maine screen appears.

2) Each person menu explanation



[Multi Tag Read (Anti Collision)]: When reading the distant mote tag, uses.

[One Tag Read]: Reads one tag UID.

[Block Read/Write]: From the memory bank reads the memory at block unit.

[Lock / Kill]: Locking the tag at memory bank unit,/cancels and memory kiil.

[Setting]: The fringe land and confirms the set contents of module.

Figure 2. Main Menu

The screenshot shows the "Multi Tag Read (Anti Collision)" window. It contains a table with three rows of tag data:

Tag UID	Co...
300000000000000000000000F00085B	1
30000000000000000000000000000001	1
3000600052900100020000003748A	1

Below the table are several controls:

- Radio buttons for "18000-6B" (unselected) and "GEN2" (selected).
- A checkbox for "Continue" (unchecked).
- A checked checkbox for "Display PC".
- A large digital display showing the "Tag Count" as "3".
- Action buttons: "Save", "Start", "Clear", and "Select_Read".

The taskbar at the bottom shows the Windows logo, the application name "Multi T...", and system icons for network, printer, battery, and time (오전 6:55).

1. Selects Gen2 protocols..
- 2.[Start] the button, with the push button [Stop] is exchanged and attempts a reading.
3. [Stop] presses the button and to discontinue a reading [Start] is exchanged.
4. As the tag modification which reads Tag Count `numbers increase.
5. [Checks in Continue and] reads the tag continuously and as the number of times counting the correspondence UID increases.
6. [Clear] presses the button and erases the result of the screen.
7. Fn4 Key and F7, F8 (Left ScanKey) presses but [like pressing Start] buttons and operates.
8. [Save] presses the button and UID where is indicated in the screen \ Flash Disk\ Currently stores at time .txt.
Ex) 20071005102239.txt

Figure 3. Multi Tag Reading

4) One Tag Reading

One Tag Read

Tag UID Co...

Tag Count

0

☒ GEN2
 ☐ Continue

☐ ISO 18000-6B

Clear Start

One T... 6:56

1. Selects Gen2 protocols.
2. [Start] the button, with the push button [Stop] is exchanged and attempts a reading.
- 3.[Stop] Presses the button and discontinues a reading, [Start] With is exchanged.
4. In [Continue] checked and once read the tag but does not discontinue not to be, reads continuously
5. The program the possibility in Tag Count” boxes counts the number of times which reads one tag, “shows.
6. [Clear] presses the button and erases the result of the screen.
7. Fn4 Key and F7, presses F8 (Left ScanKey) but [Start] like pressing the button and operates

Figure 4. One Tag Reading

Block Read/Write

Result Hex Char Dec

☒ EPC GEN2 ☐ ISO 18000-6B

Write Data(Hex)

1000000000000000000000000000000000 24

BlockType	Start	Length	Password
EPC	2	6	

Block Read(Fn1) UID Read(Fn4)

Block Write(Fn2) Clear(ESC)

Block ...

오전 6:56

1. Reads and character selects BankType where does.
2. Start locations and selects Length.
- 3.[Presses Block Read] buttons, or, presses Fn1 height. When reads
- 4.Block, contents the block contents is indicated in the screen which.
5. If AccessPassword and KillPassword territories are becoming Lock and access password without the reading is impossible.

1. Selects Write percentage BankType.
2. Selects Start locations and inputs Write contents.
3. [Block Write] presses the button, or, presses Fn2 height.

Attention: When the writing succeeds until, continuously must press the button.

4. When Write succeeds, Success is indicated in the screen.

When the tag becomes Lock, error message

- Password the case which will attempt without: Memory Locked
- The case which will attempt with the password which is incorrect: Not Detect.

Is made to test generally Write in EPC Bank and time Start certainly does to be above of 2.

Until to 0~1 territories the user writing with option and becomes.

Access Password inputs

1. Block moves with Read/Write screens and selects BankType with RESERVED.
2. Selects Start at 2.
3. Inputs 8 letters which are composed of 16 antilogarithms which in Data will use with AccessPassword.
4. [Block Write] Push Button
5. Success is indicated if succeeded.
6. BankType Start after at 2 setting Length at 2, [Block Read] confirms Access Password where is input consecutively with RESERVED.

1. Block moves with Read/Write screens and selects BankType with RESERVED.
2. Selects Start at 0.
3. Inputs 8 letters which are composed of 16 antilogarithms which in Data will use with KillPassword.
- 4.[Block Write] Push Button.
5. Success is indicated if succeeded,.
6. BankType Start after at 0 selecting Length at 2 [Block Read], confirms Kill Password where is input consecutively with RESERVED.

Changes Access, in order Password from Access Password territories must be becoming UnLock. AccessPassword and KillPassword becomes Lock when case Read/Write, Access Password are necessary.

7) Lock/UnLock

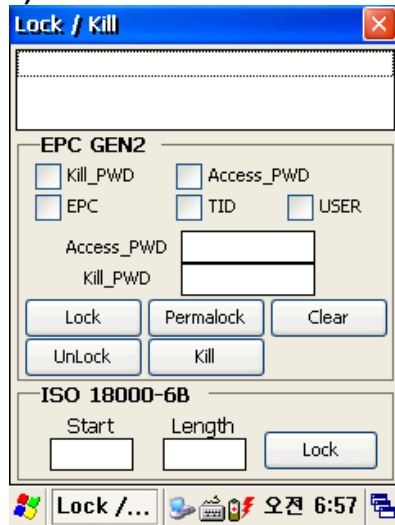


Figure 9. Lock/Kill

Memory Lock

1. Lock under boil in MemoryBank checks.
2. Inputs password 8 places in Access_PWD..
- 3.[Lock] Push Button.
4. When Lock is completed, Success, to the case where the password will be incorrect Not Detect are indicated.

1. UnLock under boil in MemoryBank checks.
2. Inputs access password 8 places in Access_PWD.
- 3.[UnLock] Push Button.
4. When UnLock is completed, Success, to the case where the passwd will be incorrect Not Detect are indicated.

Memory Kill

1. Inputs kill password 8 places in Kill_PWD..
- 2.[Kill] Push Button.
3. When Kill is completed, Success, to the case where the password will be incorrect Not Detect are indicated.

Lock, in order description below from AccessPassword and KillPassword does to be being been inputting UnLock and Kill in the tag and the tag which has been once Kill must pay attention again will be able to use..

8) Setting

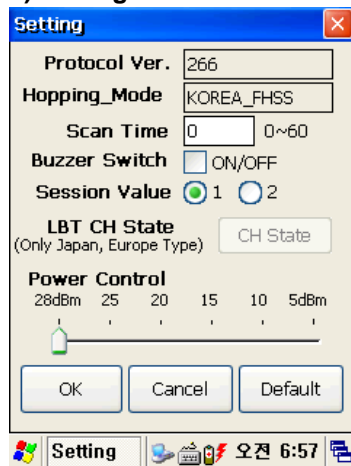


Figure 9. Setting

1. [Protocol Ver.] : With OS versions of firmware version PDA of RFID modules is unrelated .
2. [Hopping_Mode]: To be right will become setting in Hopping Mode country-of-uses of RFID modules and will be come out and the nil which with S/W will be able to change.
- 3 [Scan Time]: Recognizes the tag of RFID, the timely basic price which modules is 0, 0 when the user stands still until, continuously accomplishes an order. Will be able to change 1 first level comfort price.
- 4 [Buzzer Switch]: From RFID modules the tag recognition [hayss] time lights Buzzer where rings and puts out.
- 5 [Session Value]: Index value 1st time about low of early stage once will read tag in 0.5 intervals and a data again and the data which admits will read will admit, 2nd time Power will become off and on about 30 second later reset (only the tag which does not read will read and when, use)
6. [Power Control]: The output configuration basic price of RFID modules is 0 and Full Power (28dbm) is. Only set price being big, decreased. For example 25dbm where the index value draws out 3 from 3rd back 28 is output.